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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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December 17, 2001

Johnny Pappas, Sr. Environmental Engineer
Plateau Mining Corporation
847 Northwest Highway 191
Helper, Utah 84526

RE: Conditional Approval of Significant Revision to Exhibit 20 (Crandall Canyon Reclamation and Post Mining Land Use Change), Plateau Mining Corporation, Willow Creek Mine, C/007/038-SR01A, Outgoing File

Dear Mr. Pappas:

The above-referenced revision is hereby conditionally approved. A copy of our Technical Analysis is enclosed for your information. Please note that the concern over reclamation of the Crandall Canyon shafts expressed in the 1996 TA (accompanying the initial permit) is still valid. As promised at that time, the Division is undertaking a separate review of the best technology available for reclamation of shafts. This review will be forwarded to you when it is completed. Plateau Mining Corporation will be required to amend the reclamation plan and implement the best technology available.

Please supply the Division with five clean copies of the revised Exhibit 20 and a new C1C2 form for distribution by January 14,2002. A stamped incorporated copy will be returned to you to update your copy of the Mining and Reclamation Plan.

If you have any questions, please call me at (801) 538-5325 or Priscilla Burton at (801) 538-5288.

Sincerely,

Daron R. Haddock

Daron R. Haddock
Permit Supervisor

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Enclosure
cc: Price Field Office
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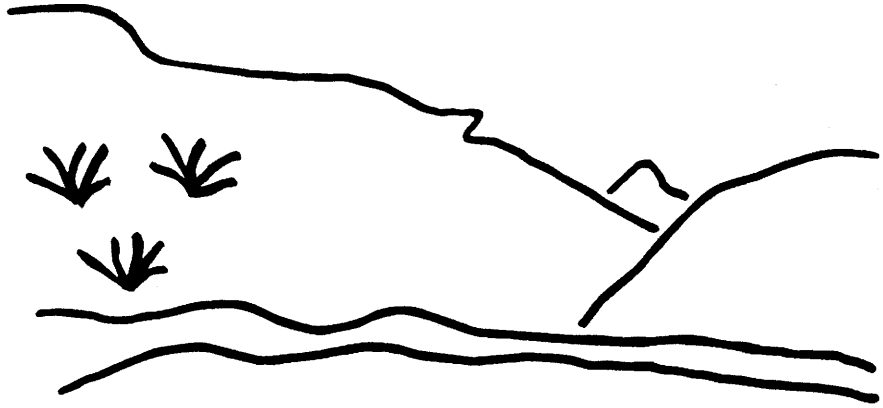
State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Willow Creek Mine
Exhibit 20 Crandall Canyon
C/007/038-SR01A-1
Technical Analysis
December 13, 2001

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TECHNICAL ANALYSIS

INTRODUCTION

Plateau Mining Corporation, 847 Northwest Highway 191, Helper, Utah 84526, a subsidiary of RAG American Coal Company, 999 Corporate Blvd., Linthicum Heights, MD 21090, has filed an application with the Utah Department of Natural Resources, Division of Oil, Gas and Mining for a change in post mining land use to Permit C/007/038.

Pursuant to R645-301-413.300 of the Utah Coal Program Regulations, the Plateau Mining Corporation revised Exhibit 20, the reclamation plan for the Crandall Canyon area of the Willow Creek Mine. The revision incorporates the change of post-mining land use from grazing and wildlife to recreational use for a portion of the disturbed area owned by C-Canyon, L.C. This use will be supported by the permanent road in Crandall Canyon. (After bond release, land at the head of the canyon will revert to the landowner (C-Canyon, L.C.) The Division finds that the postmining land use change to recreational use as requested by the landowner is not impractical or unreasonable and is consistent with adjacent land use plans and can be most satisfactorily achieved with retention of the road.

The upper portion of the Canyon (essentially a portion of ancillary road A-1) above the propane tank foundations was reclaimed in 1990 or 1991. Plateau Mining Corporation (PMC) will leave the reclaimed portion of the road and leachfield in its present configuration at the request of the landowner. The landowner, C-Canyon, L.C., has an understanding of and has accepted responsibility for the road maintenance in Crandall Canyon after bond release.

As a result of the retention of the primary road, changes have been made in plans for backfilling and grading, slope reconstruction and channel design during reclamation. And at the landowner's request, the interim reclamation (undertaken in 1990) of the leachfield and leachfield access road at the head of the canyon will not be redisturbed.

Mr. Stan Perks, Mining Engineer with the Bureau of Land Management, has verbally expressed concerns about the methods described in the reclamation plan for shaft closure and ventilation and brought this issue to the fore. As a result, the Division is initiating a separate review of this reclamation technique in cooperation with the BLM. The Permittee will be required to modify the reclamation plans for the ventilation shafts in Crandall Canyon based upon the best available technology.

The initial submittal for proposed changes to Exhibit 20, Section 3.7 of the Willow Creek MRP were received at the Division on January 8, 2001. The Division reviewed the submittal and returned it to Plateau Mining Corporation (PMC) with deficiencies on April 5, 2001. The PMC response to deficiencies was received at the Division on September 17, 2001.

GENERAL CONTENTS

IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

Minimum Regulatory Reference:

The operator of the coal mine and all owners and controllers of the operation must be identified by name and address. The Division with the Applicant/Violator System must crosscheck the information provided and other sources such as DOGM inspection and enforcement records, State corporation commission or tax records. If the Division identifies any errors in the ownership or control information, the applicant must be contacted to resolve the matter immediately. If the Division discovers that none of the persons identified in the application has had any previous mining experience, the applicant will be contacted to verify this fact.

The Applicant/Violator System will be updated with new information received by the Division.

Analysis:

Volume 1, Section 2.1.2 contains information relative to R645-301-112. Figure 2.1-1, dated March 28, 2000, outlines the location of Plateau Mining Corporation (PMC) within the RAG American Coal Company corporate structure. Figure 2.1-1 contains the names of those operations affiliated with the Applicant. Plateau Mining Corporation is a wholly owned subsidiary of RAG American Coal Company which in turn is a wholly owned subsidiary of RAG American Coal Holding, Inc. All the corporations mentioned above were incorporated under the laws of the State of Delaware. Ownership and control information is listed in Exhibit 1, Volume 4 as required under R645-112.300.

Plateau Mining Corporation as the Applicant and Operator is authorized to do business in the State of Utah, Colorado and Delaware. Section 2.1.2.1 lists the employer I.D. number, address and telephone number of PMC. PMC's resident agent is CT Corporation System; 50 West Broadway; Salt Lake City, Utah 84101. PMC will be responsible for the payment of Abandoned Mine fees. The main MSHA number will be 42-02113; some facilities will have separate MSHA numbers.

The land within the disturbed area boundary is owned by Plateau Mining Company.

The owners of the coal to be mined within the permit area are shown on the Regional Coal Ownership Map, (Map 2), and are listed in Section 2.1.2.4 as Blackhawk Coal Co., Carbon County, USDI - Bureau of Land Management, and Utah DNR. The same four entities own the mineral rights contiguous to the property.

The owners of the surface to be affected by operations are shown on Map 1, Regional Surface Ownership Map. (According to Map1 and to the text, Harry C. and Alda M. Edwards are adjacent landowners, but their address is not available from Carbon County records.) Appendix 3.7V of the application indicates that, within the permit area, 800 acres of land is owned by C-Canyon, L.C. represented by Mr. Reed L. Martineau, Esq. Map 1 and the text on page 2.1-4 have been updated with this submittal to include C-Canyon, L.C. Section 3.7-4(7) of the application refers to that recent transaction and explains that the landowner is seeking the postmining land use change from undeveloped land to recreational land.

Findings:

The information provided meets the minimum Identification of Interest requirements of the Regulations.

VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

Minimum Regulatory Reference:

The application must inform the Division of any of the following:

(1) State or Federal permits suspension or revocation;
(2) Bond or other security forfeiture in the last five years;
(3) Any State or Federal violations received in the last three years by the applicant or any subsidiary, affiliate, or persons controlled by or under common control with the applicant. All outstanding violations (regardless of date) must also be disclosed.

The Division will review all available information and will not issue a permit if any operation owned or controlled by the applicant or linked to the applicant is in violation of SMCRA or the State Program or any State or Federal environmental law.

The Division will notify the applicant of the violation, suspension or forfeiture hindering their current application for permit and give the applicant an opportunity to rebut the findings. The Division will keep the Applicant Violator System updated.

Analysis:

Compliance information is presented in Section 2.1.4 and Exhibit 2 (Volume 8). Neither the Applicant nor any affiliate, subsidiary or persons controlled by or under common control with the Applicant has had a federal or state mining permit suspended or revoked in the five years prior to the date of the application, and these entities have not forfeited a mining bond or similar security deposited in lieu of bond.

R645-301-113.300 requires a list of all unabated cessation orders and air and water quality violation notices received by the Applicant or any operation owned or controlled by either the Applicant or any person that owns or controls the Applicant. Exhibit 2 (dated October 1999) provides such information. There have been no notices of violations issued to Plateau Mining Corporation since NOV 98-46-3-2 was issued on October 19, 1998.

Findings:

The information provided meets the minimum Violation Information requirements of the Regulations.

RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

Minimum Regulatory Reference:

Documents giving legal right to enter the permit area must be detailed in the application by date, type of document, land description and rights claimed. Any pending litigation over these legal rights must be disclosed.

The written consent of the landowner for the extraction of the coal by surface mining methods must also be included when

the surface and mineral owners are different. Also a copy of the conveyance that grants the legal authority to extract the coal by surface methods will be included.

The Division does not have the authority to adjudicate property rights disputes.

Analysis:

Plateau Mining Corporation presents legal descriptions of land, coal leases and access agreements in Section 2.1.5 by which PMC has right of entry.

Findings:

Right of entry information is considered complete and accurate.

LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

Minimum Regulatory Reference:

The application will describe and identify the lands (on a map) subject to coal mining over the life of the operation, including the size, sequence, and timing of the mining anticipated and permit boundaries. Coal mining and reclamation operations may only occur on the lands identified on the maps submitted and that are subject to the performance bond.

A public notice advertisement will contain a map or description of the precise location and boundaries of the proposed permit area. So that local residents can identify the area, the map must have a north arrow and may include local landmarks.

Analysis:

Section 2.1.5.1 has legal descriptions for fee surface and coal and for coal leases held by Cyprus Western Coal Company.

Section 2.1.6.1.and 2.1.6.2 discuss areas unsuitable for mining and operations within 100 feet of a public road.

Findings:

This portion of the application is complete and accurate.

PERMIT TERM

Regulatory References: 30 CFR 778.17; R645-301-116.

Minimum Regulatory Reference:

The application will describe and identify the lands (on a map) subject to coal mining over the life of the operation, including the size, sequence, and timing of the mining anticipated and permit boundaries. Coal mining and reclamation operations may only occur on the lands identified on the maps submitted and that are subject to the performance bond.

A public notice advertisement will contain a map or description of the precise location and boundaries of the proposed permit area. So that local residents can identify the area, the map must have a north arrow and may include local landmarks.

Analysis:

The permit was initially issued in 1996 and was re-issued on April 24, 2001. The permit term is for five years and may be reissued every five years, over the life of the mine. Information provided in the permit is for the life of the mine (Section 2.1.7).

Findings:

This portion of the application is complete and accurate.

PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

Minimum Regulatory Reference

After the application has been determined "administratively complete," an advertisement must be placed in a local newspaper of general circulation in the locality of the proposed surface coal mining and reclamation operation at least once a week for four consecutive weeks. A copy of the advertisement as it will appear in the newspaper will be submitted to the regulatory authority.

At a minimum, the following will be included in the ad:

(1) The name and business address of the applicant.
(2) A map or description.
(3) The location where a copy of the application is available for public inspection.
(4) The name and address of the Division where written comments, objections, or requests for informal conferences on the application may be submitted.
(5) If an applicant seeks a permit to mine within 100 feet of the outside right-of-way of a public road or to relocate or close a public road, except where public notice and hearing have previously been provided for this particular part of the road; a concise statement describing the public road, the particular part to relocated or closed, and the approximate timing and duration of the relocation or closing.
(6) If the application includes a request for an experimental practice, a statement indicating that an experimental practice is requested and identifying the regulatory provisions for which a variance is requested.

The Division will notify in writing local governmental agencies and all Federal or State governmental agencies involved in or with an interest in the permit process.

Documentation of the public notice and comment period required for the Permit should be incorporated as part of the Permit.

Analysis:

A copy of the publication has been obtained by the Division from the Sun Advocate as published on March 1, 8, 15 and 22, 2001. The legal description in the advertisement is correct, and it includes other information required by R645-300-121.100. To date, no public comment has been received on the issue of the post-mining land use change for Crandall Canyon. An Affidavit of Publication is included in Exhibit 3, Volume 8.

Findings:

The Public Notice and Comment requirements of the Regulations have been satisfied.

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

Mr. Johnny Pappas, a responsible Plateau Mining Corporation official has affirmed by signature on the C1 Form that the information in the amendment is true and correct to the best of the official's information and belief. This affirmation was included in the transmittal which accompanied the permit application submittal. The C1 Form will be included in the Mining and Reclamation Plan before the table of contents.

Findings:

This portion of the application is complete and accurate

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

Section 2.1.11 lists the individuals and consulting companies who were engaged in writing and compiling the MRP along with their field of expertise.

Findings:

This portion of the application is complete and accurate.

MAPS AND PLANS

Regulatory Reference: 30 CFR 777.14; R645-301-140.

Analysis:

All maps in the MRP are either U.S. Geologic Survey Mapping or site specific mapping developed using surveyed aerial control and accepted aerial photogrammetry methods. Where required by R645-301-512, maps have been certified by a registered professional engineer or land surveyor.

Findings:

This portion of the application is complete and accurate.

COMPLETENESS

Regulatory Reference: 30 CFR 777.15; R645-301-150.

Analysis:

The application for change of postmining land use was determined to be administratively complete which means that the application contained the minimum information required under R645-301.

Findings:

This portion of the application is complete and accurate.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GENERAL

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

Minimum Regulatory Requirements:

Include a description of the existing, pre-mining environmental resources within the proposed permit area and adjacent areas that may be affected or impacted by the proposed underground mining activities.

Analysis:

Crandall Canyon is a narrow canyon holding Crandall Creek, a tributary of the Price River. At its upper reaches, Crandall Canyon is at an elevation of 7,400 feet. As it converges with Price Canyon, the elevation is 6,400 feet. Crandall Canyon has steep sideslopes (Exhibits 3.7-1 and 3.7-2). The stream meanders from one side of the canyon to the other across the broad canyon bottom, throughout the length of the canyon. Exhibit 3.7-7B and D show cross-sections of the undisturbed area of the canyon and illustrate the steepslopes cut by the stream through unconsolidated material.

An unconfined aquifer exists in Crandall Canyon at a depth of approximately 30 - 60 feet at the unconsolidated soil/rock interface. Construction of the two ventilation shafts in Crandall Canyon intercepted this aquifer. As discussed in Exhibit 20, Section 3.7-5(3) (3), water flows in through the concrete lined shafts at a rate of approximately 13 - 50 gpm and is transmitted through the mine to the Blackhawk formation to recharge the regional aquifer.

Since the Price River mean annual discharge rate is 112 cfs, 50 gpm represents a loss of 0.1% to the Price River. Plateau Mining Corporation has 1.7 cfs (763 gpm) of water right on the Price River to mitigate the minor reduction in yield from the drainage basin.

Findings:

The information provided meets the minimum requirements of the General Environmental Resource requirements of the Regulations.

PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

Minimum Regulatory Requirements:

Describe and identify the lands subject to surface coal mining operations over the estimated life of those operations and the size, sequence, and timing of the subareas for which it is anticipated that individual permits for mining will be sought.

Analysis:

The Crandall Canyon disturbed area is located in Carbon County, Utah as follows:

Township 12 South, Range 9 East

Section 22: Portions of SW/4 SE/4; SE/4 SW/4;
Section 27: Portions of S/2 NW/4; NE/4 NW/4; NW/4 SW/4;
Section 28: Portions of S/2;
Section 29: Portions of SE/4

The permit area is shown on the Kyune U.S. Geological Survey 7.5-minute map.

Findings

The information provided meets the minimum regulatory requirements for describing the Permit Area.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.12; R645-301-411.

Minimum Regulatory Requirements:

Describe and identify the nature of cultural historic and archeological resources listed or eligible for listing on the National Register of Historic Places and known archeological sites within the proposed permit and adjacent areas. The description shall be based on all available information, including, but not limited to, information from the State Historic Preservation Officer and local archeological, historical, and cultural preservation groups.

Identify and evaluate important historic and archeological resources that may be eligible for listing on the National Register of Historic Places, through the collection of additional information, conduct of field investigations, or other appropriate analyses.

Analysis:

Exhibit 3.7-2 shows some rock structures of cultural significance. Historical study reports are included in Exhibit 19 of the MRP.

Findings:

The information provided meets the minimum Historic and Archeological requirements of the Regulations.

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.18; R645-301-724.

Minimum Regulatory Requirements:

Provide a statement of the climatological factors that are representative of the proposed permit area, including: the average seasonal precipitation; the average direction and velocity of prevailing winds; and, seasonal temperature ranges. Additional data may be requested as deemed necessary to ensure compliance other regulatory requirements.

Analysis:

Climatological information is found in Sections 3.7.1.4, and 3.7.4. Information specific to temperatures, precipitation and wind is located in Sections 3.7.4.1, 3.7.4.2, and 3.7.4.3, respectively. More climatological information is found on Page 3.7-28, Section 3.7.3.1. Table 3.7-7 is the summary of climatological data.

Average monthly temperatures are listed in Table 3.7-7. The frost-free period ranges from 60 to 120 days, depending on elevation and exposure. Temperatures can change rapidly when fast moving storm fronts pass. Annual precipitation is 14.8 inches. Rainfall frequently comes in brief, high-intensity storms. Average monthly precipitation is lowest in June, 0.65-inches, and highest in September, 1.86-inches.

Prevailing summer winds are from the West and Northwest, usually blowing less than 20 mile per hour. Winter winds tend to be more variable, blowing frequently from the Northeast. Diurnal flows tend to be upslope in the daytime and downslope at night.

Findings:

The information provided meets the minimum Climatological requirements of the Regulations.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Minimum Regulatory Requirements:

Provide adequate soil survey information on those portions of the permit area to be affected by surface operations or facilities consisting of a map delineating different soils, soil identification, soil description, and present and potential productivity of existing soils.

Where selected overburden materials are proposed as a supplement or substitute for topsoil, provide results of the analysis, trials and tests required. Results of physical and chemical analyses of overburden and topsoil must be provided to demonstrate that the resulting soil medium is equal to or more suitable for sustaining revegetation than the available topsoil, provided that trials and tests are certified by an approved laboratory. These data may be obtained from any one or a combination of the following sources: U.S. Department of Agriculture Soil Conservation Service published data based on established soil series; U.S. Department of Agriculture Soil Conservation Service Technical Guides; State agricultural agency, university, Tennessee Valley Authority, Bureau of Land Management or U.S. Department of Agriculture Forest Service published data based on soil series properties and behavior; or, results of physical and chemical analyses, field site trials, or greenhouse tests of the topsoil and overburden materials (soil series) from the permit area. If the permittee demonstrates through soil survey or other data that the topsoil and unconsolidated material are insufficient and substitute materials will be used, only the substitute materials must be analyzed.

Analysis:

Initial topsoil and subsoil sampling for the Crandall Canyon area is located in Volume 4, Exhibit 5, "Price River Coal 1984 Permit Soil Analyses." Samples taken in 1981 portray a loamy sand subsoil and loam topsoil. The topsoil was fertile with nitrogen levels ≈ 4, phosphorus levels ≈10, and potassium levels ≈ 150. The pH was in the range of 8.0 and EC was below 0.5.

More detailed soil information is found in Volume 15, Exhibit 20, Appendix 3.7S, "Crandall Canyon Soil Sampling Results." Here are found the results of overburden and topsoil evaluations conducted in 1995. Seven soil pits were dug with a backhoe in the facilities area. An auger was used to sample the two topsoil piles. Soil logs and profile descriptions are provided.

The 1995 survey identified the Soils along the bottom of Crandall Canyon as Shupert and Winetti mapping units; along the lower slopes of the canyon is the Datino Variant; and along the upper slopes are the Pathead and Comodore families. During construction in the canyon, soils from the upper and lower slopes were used to construct the facilities pad. These soils are represented by pits EF-4, EF-5, and EF-6. Construction of the shafts brought shale and coarse fragments to the surface which is represented in pits EF-1, EF-2, EF-3 and EF - 7 (Figure 1, Appendix 3.7S). The 1995 survey indicates that soils on the pad from shaft construction are less desirable for topsoil substitute due to higher content of clay, salts, selenium, coal and coarse fragments. The soils in the pad at represented by pits EF-4, EF-5, and EF-6 are the most suitable topsoil substitutes. Although this overburden has a higher coarse fragment content (32%) than the topsoil (13%), it meets the Division's suitability criteria.[1] This proposal indicates that soil from the location of soil pits EF-4, EF-5 and EF-6 will be utilized as substitute topsoil.

Findings:

The information provided meets the minimum Soils Resource requirements of the Regulations.

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR 785.19; 30 CFR 822; R645-302-320

Minimum Regulatory Requirements:

This section applies to surface coal mining and reclamation operations on areas or adjacent to areas including alluvial valley floors in the arid and semiarid areas west of the 100th meridian.

Alluvial valley floor determination

Permit applicants who propose to conduct surface coal mining and reclamation operations within a valley holding a stream

[1] Leatherwood, James and Dan Duce. 1988. "Guidelines for Topsoil and Overburden Management For Underground and Surface Coal Mines." Utah Department of Natural Resources. Division of Oil, Gas, and Mining.

or in a location where the permit area or adjacent area includes any stream, in the arid and semiarid regions of the United States, as an initial step in the permit process, may request the Division to make an alluvial valley floor determination with respect to that valley floor. The applicant shall demonstrate and the Division shall determine, based on either available data or field studies submitted by the applicant, or a combination of available data and field studies, the presence or absence of an alluvial valley floor. Studies shall include sufficiently detailed geologic, hydrologic, land use, soils, and vegetation data and analysis to demonstrate the probable existence of an alluvial valley floor in the area. The Division may require additional data collection and analysis or other supporting documents, maps, and illustrations in order to make the determination.

The Division shall make a written determination as to the extent of any alluvial valley floors within the area. The Division shall determine that an alluvial valley floor exists if it finds that unconsolidated streamlaid deposits holding streams are present; and there is sufficient water available to support agricultural activities as evidenced by the existence of current flood irrigation in the area in question; the capability of an area to be flood irrigated, based on evaluations of streamflow, water quality, soils, and topography; or, subirrigation of the lands in question derived from the ground-water system of the valley floor.

If the Division determines in writing that an alluvial valley does not exist pursuant to the requirements of this section, no further consideration of this section is required.

Applicability of statutory exclusions

If an alluvial valley floor is identified and the proposed surface coal mining operation may affect this alluvial valley floor or waters that supply the alluvial valley floor, the applicant may request the Division, as a preliminary step in the permit application process, to separately determine the applicability of the statutory exclusions set forth in this section. The Division may make such a determination based on the available data, may require additional data collection and analysis in order to make the determination, or may require the applicant to submit a complete permit application and not make the determination until after the complete application is evaluated.

An applicant need not submit the information required and the Division is not required to make the findings required of this section when the Division determines that one of the following circumstances, heretofore called statutory exclusions, exist:

1. The premining land use is undeveloped rangeland that is not significant to farming;

2. Any farming on the alluvial valley floor that would be affected by the surface coal mining operation is of such small acreage as to be of negligible impact on the farm's agricultural production. Negligible impact of the proposed operation on farming will be based on the relative importance of the affected farmland areas of the alluvial valley floor area to the farm's total agricultural production over the life of the mine; or,

3. The circumstances set forth in Section 822.12(b)(3) or (4) of this Chapter exist.

For the purpose of this section, a farm is one or more land units on which farming is conducted. A farm is generally considered to be the combination of land units with acreage and boundaries in existence prior to August 3, 1977, or if established after August 3, 1977, with those boundaries based on enhancement of the farm's agricultural productivity and not related to surface coal operations.

(c) Summary denial. If the Division determines that the statutory exclusions are not applicable and that any of the required findings of Paragraph (e)(2) of this section cannot be made, the Division may, at the request of the applicant:
(1) Determine that mining is precluded on the proposed permit area and deny the permit without the applicant filing any additional information required by this section; or
(2) Prohibit surface coal mining and reclamation operations in all or parts of the area to be affected by mining.
(d) Application contents for operations affecting designated alluvial valley floors. (1) If land within the permit area or adjacent area is identified as an alluvial valley floor and the proposed surface coal mining operation may affect an alluvial valley floor or waters supplied to an alluvial valley floor, the applicant shall submit a complete application for the proposed surface coal mining and reclamation operations to be used by the Division together with other relevant information as a basis for approval or denial of the permit. If an exclusion of Paragraph (b)(2) of this section applies, then the applicant need not submit the information required in Paragraphs (d)(2)(ii) and (iii) of this section.
(2) The complete application shall include detailed surveys and baseline data required by the Division for a determination of--
(i) The essential hydrologic functions of the alluvial valley floor which might be affected by the mining and reclamation process. The information required by this subparagraph shall evaluate those factors which contribute to the collecting, storing, regulating and making the natural flow of water available for agricultural activities on the alluvial valley floor and shall include, but are not limited to:
(A) Factors contributing to the function of collecting water, such as amount, rate and frequency of rainfall and runoff, surface roughness, slope and vegetative cover, infiltration, and evapotranspiration, relief, slope and density of drainage channels;
(B) Factors contributing to the function of storing water, such as permeability, infiltration, porosity, depth and direction of ground water flow, and water holding capacity;
(C) Factors contributing to the function of regulating the flow of surface and ground water, such as the longitudinal profile and slope of the valley and channels, the sinuosity and cross-sections of the channels, interchange of water between streams and associated alluvial and bedrock aquifers, and rates and amount of water supplied by these aquifers; and
(D) Factors contributing to water availability, such as the presence of flood plains and terraces suitable for agricultural activities.

(ii) Whether the operation will avoid during mining and reclamation the interruption, discontinuance, or preclusion of farming on the alluvial valley floor;

(iii) Whether the operation will cause material damage to the quantity or quality of surface or ground waters supplied to the alluvial valley floor;

(iv) Whether the reclamation plan is in compliance with requirements of the Act, this Chapter, and regulatory program; and

(v) Whether the proposed monitoring system will provide sufficient information to measure compliance with Part 822 of this Chapter during and after mining and reclamation operations.

(e) Findings. (1) The findings of Paragraphs (e)(2)(i) and (ii) of this section are not required with regard to alluvial valley floors to which are applicable any of the exclusions of Paragraph (b)(2) of this section.

(2) No permit or permit revision application for surface coal mining and reclamation operations on lands located west of the 100th meridian west longitude shall be approved by the Division unless the application demonstrates and the Division finds in writing, on the basis of information set forth in the application, that

(i) The proposed operations will not interrupt, discontinue, or preclude farming on an alluvial valley floor;

(ii) The proposed operations will not materially damage the quantity or quality of water in surface and underground water systems that supply alluvial valley floors; and

(iii) The proposed operations will comply with Part 822 of this Chapter and the other applicable requirements of the Act and the regulatory program.

Analysis:

Alluvial Valley Floor Determination

The approved MRP refers to a decision document by the Division of Oil Gas and Mining (DOGM) in 1982. At that time, a multi-disciplinary team studied the vicinity of the Castle Gate Preparation Plant. The team determined that the site was in an alluvial valley, but that there were no effects on the soils or water quality by the adjacent mining activity. This document is reprinted in Exhibit 10.

The Price River is impacted by the power plant; the Dept of Transportation road salt storage facility; highway activity and abandoned coal refuse piles along the river banks.

Crandall Canyon is a narrow canyon holding Crandall Creek, a tributary of the Price River. At its upper reaches, Crandall Canyon is at an elevation of 7,400 feet. As it converges with Price Canyon, the elevation is 6,400 feet. The natural topography of Crandall Canyon is characterized by steep canyon side slopes and a broad canyon bottom (Exhibits 3.7-1 and 3.7-2). The stream meanders from one side of the canyon to the other throughout the length of the canyon. Exhibit 3.7-7B and D show cross-sections of the undisturbed area of the canyon and illustrate the steep slopes cut by the stream through unconsolidated material.

There exists an unconfined aquifer in Crandall Canyon at a depth of approximately 30 - 60 feet at the unconsolidated soil/rock interface. This aquifer was intercepted by the two ventilation shafts in Crandall Canyon. As discussed in Exhibit 20, Section 3.7-5(3) (3), water flows in through the concrete lined shafts at a rate of approximately 13 - 50 gpm and is transmitted through the mine to the Blackhawk formation to recharge the regional aquifer.

Since the Price River mean annual discharge rate is 112 cfs, 50 gpm represents a loss of 0.1% to the Price River. Plateau Mining Corporation has 1.7 cfs (763 gpm) of water right on the Price River to mitigate the minor reduction in yield from the drainage basin.

Applicability of Statutory Exclusions

The plan is considered technically adequate with regard to the Alluvial Valley discussion. The pre-mining land use of Crandall Canyon is undeveloped rangeland which is not significant to farming.

Findings:

The information provided meets the minimum Alluvial Valley Floor requirements of the Regulations. The Crandall Canyon mine site is not categorized as an alluvial valley due to its use as undeveloped rangeland.

PRIME FARMLAND

Regulatory Reference: 30 CFR 785.16, 823; R645-301-221, -302-270.

Minimum Regulatory Requirements:

The U.S. Soil Conservation Service within each State shall establish specifications for prime farmland soil removal, storage, replacement, and reconstruction. The Division shall use the soil-reconstruction specifications to carry out its responsibilities under this section.

The requirements of this part shall not apply to:

Note: This section is suspended "insofar as it excludes from the requirements of Prime Farmlands those coal preparation plants, support facilities, and roads that are surface mining activities".

(1) Coal preparation plants, support facilities, and roads of surface and underground mines that are actively used over extended periods of time and where such uses affect a minimal amount of land.

(2) Disposal areas containing coal mine waste resulting from underground mines that is not technologically and economically feasible to store in underground mines or on non-prime farmland. The operator shall minimize the area of prime farmland used for such purposes.

(3) Prime farmland that has been excluded in accordance with any valid existing rights as indicated below.

This section applies to any person who conducts or intends to conduct surface coal mining and reclamation operations on prime farmland historically used for cropland. This section does not apply to:

(1) Lands on which surface coal mining and reclamation operations are conducted pursuant to any permit issued prior to August 3, 1977; or
(2) Lands on which surface coal mining and reclamation operations are conducted pursuant to any renewal or revision of a permit issued prior to August 3, 1977; or
(3) Lands included in any existing surface coal mining operations for which a permit was issued for all or any part thereof prior to August 3, 1977, provided that: such lands are part of a single continuous surface coal mining operation begun under a permit issued before August 3, 1977; and the permittee had a legal right to mine the lands prior to August 3, 1977, through ownership, contract, or lease but not including an option to buy, lease, or contract; and the lands contain part of a continuous recoverable coal seam that was being mined in a single continuous mining pit (or multiple pits if the lands are proven to be part of a single continuous surface coal mining operation) begun under a permit issued prior to August 3, 1977.

For purposes of this section, renewal of a permit means a decision by the Division to extend the time by which the permittee may complete mining within the boundaries of the original permit, and revision of the permit means a decision by the Division to allow changes in the method of mining operations within the original permit area, or the decision of the Division to allow incidental boundary changes to the original permit. A pit shall be deemed to be a single continuous mining pit even if portions of the pit are crossed by a road, pipeline, railroad, or power line or similar crossing. A single continuous surface coal mining operation is presumed to consist only of a single continuous mining pit under a permit issued prior to August 3, 1977, but may include non-contiguous parcels if the operator can prove by clear and convincing evidence that, prior to August 3, 1977, the non-contiguous parcels were part of a single permitted operation. For the purposes of this paragraph, clear and convincing evidence includes, but is

not limited to, contracts, leases, deeds or other properly executed legal documents (not including options) that specifically treat physically separate parcels as one surface coal mining operation.

All permit applications, whether or not prime farmland is present, shall include the results of a reconnaissance inspection of the proposed permit area to indicate whether prime farmland exists. The Division in consultation with the U.S. Soil Conservation Service shall determine the nature and extent of the required reconnaissance inspection.

If the reconnaissance inspection establishes that no land within the proposed permit area is prime farmland historically used for cropland, the applicant shall submit a statement that no prime farmland is present. The statement shall identify the basis upon which such a conclusion was reached.

If the reconnaissance inspection indicates that land within the proposed permit area may be prime farmland historically used for croplands, the applicant shall determine if a soil survey exists for those lands and whether soil mapping units in the permit area have been designated as prime farmland. If no soil survey exists, the applicant shall have a soil survey made of the lands within the permit area which the reconnaissance inspection indicates could be prime farmland. Soil surveys of the detail used by the U.S. Soil Conservation Service for operational conservation planning shall be used to identify and locate prime farmland soils.

If the soil survey indicates that no prime farmland soils are present within the proposed permit area, the plan shall include the results of a reconnaissance inspection of the proposed permit area to indicate whether prime farmland exists.

Analysis:

Exhibit 19, Figure 8-3 contains a letter from the Soil Conservation Service indicating that no prime farmland exists within the disturbed area boundary. The letter is dated May 21, 1991.

Findings:

The Division agrees with the Soil Conservation Service's opinion that the Crandall Canyon mine site disturbed area is not prime farmland.

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Minimum Regulatory Requirements:

Provide a plan for the reclamation of the lands within the proposed permit area, showing how the applicant will comply with the regulatory program and the environmental protection performance standards. The plan shall include, at a minimum, contain the following information for the proposed permit area: a detailed timetable for the completion of each major step in the reclamation plan; a detailed estimate of the cost of the reclamation of the proposed operations required to be covered by a performance bond, with supporting calculations for the estimates; a plan for backfilling, soil stabilization, compacting, and grading, with contour maps or cross sections that show the anticipated final surface configuration of the proposed permit area; a plan for redistribution of topsoil, subsoil, and other material along with a demonstration of the suitability of topsoil substitutes or supplements shall be based upon analysis of the thickness of soil horizons, total depth, texture, percent coarse fragments, pH, and areal extent of the different kinds of soils; other chemical and physical analyses, field-site trials, or greenhouse tests if determined to be necessary or desirable to demonstrate the suitability of the topsoil substitutes or supplements may also be required; a plan for revegetation including, but not limited to, descriptions of the schedule of revegetation, species and amounts per acre of seeds and seedlings to be used, methods to be used in planting and seeding, mulching techniques, irrigation, if appropriate, and pest and disease control measures, if any, measures proposed to be used to determine the success of revegetation, and, a soil testing plan for evaluation of the results of topsoil handling and reclamation procedures related to revegetation; a description of the measures to be used to maximize the use and conservation of the coal resource; a description of measures to be employed to ensure that all debris, acid-forming and toxic-forming materials, and materials constituting a fire hazard are disposed of accordingly and a description of the contingency plans which have been developed to preclude sustained combustion of such materials; a description, including appropriate cross sections and maps, of the measures to be used to seal or manage mine openings, and to plug, case, or manage exploration holes, other bore holes, wells, and other openings within the proposed permit area; and, a description of steps to be taken to comply with the requirements of the Clean Air Act, the Clean Water Act, and other applicable air and water quality laws and regulations and health and safety standards.

Analysis:

The aforementioned coal rules require a Permittee to close or permanently reclaim all affected areas impacted by coal mining and reclamation operations upon cessation of mining. The Permittee must have a Division approved reclamation plan in place in order to conduct the reclamation activities. R645-301-541.300 states that for the purposes of UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES, all surface equipment, structures, or other facilities not required for continued underground mining activities and monitoring, unless approved by the Division as suitable for the post-mining land use or environmental monitoring, will be removed and the affected lands reclaimed. Hence, R645-301-541.300 is addressed by this application in order to obtain the Division approval necessary to retain the access road as part of the approved post-mining land use.

Findings:

The information provided is adequate for the General Reclamation Requirements required by the Regulations.

POSTMINING LAND USES

Regulatory Reference: 30 CFR 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Minimum Regulatory Requirements:

In general, all disturbed areas shall be restored in a timely manner to conditions that are capable of supporting: the uses they were capable of supporting before any mining; or higher or better uses.

Provide a detailed description of the proposed use, following reclamation, of the land to be affected within the proposed permit area by surface operations or facilities, including a discussion of the utility and capacity of the reclaimed land to support a variety of alternative uses, and the relationship of the proposed use to existing land-use policies and plans. This description shall explain: how the proposed postmining land use is to be achieved and the necessary support activities which may be needed to achieve the proposed land use; where a land use different from the premining land use is proposed, all materials needed for approval of the alternative use; and, the consideration given to making all of the proposed underground mining activities consistent with surface owner plans and applicable State and local land-use plans and programs.

The description shall be accompanied by a copy of the comments concerning the proposed use from the legal or equitable owner of record of the surface areas to be affected by surface operations or facilities within the proposed permit area and the State and local government agencies which would have to initiate, implement, approve, or authorize the proposed use of the land following reclamation.

Determine premining uses of land. The premining uses of land to which the postmining land use is compared shall be those uses which the land previously supported, if the land has not been previously mined and has been properly managed. The postmining land use for land that has been previously mined and not reclaimed shall be judged on the basis of the land use that existed prior to any mining; Provided that, If the land cannot be reclaimed to the land use that existed prior to any mining because of the previously mined condition, the postmining land use shall be judged on the basis of the highest and best use that can be achieved which is compatible with surrounding areas and does not require the disturbance of areas previously unaffected by mining.

Criteria for alternative postmining land uses. Higher or better uses may be approved as alternative postmining land uses after consultation with the landowner or the land management agency having jurisdiction over the lands, if the proposed uses meet the following criteria: there is a reasonable likelihood for achievement of the use; the use does not present any actual or probable hazard to public health and safety, or threat of water diminution or pollution; and , the use will not be impractical or unreasonable, inconsistent with applicable land use policies or plans, involve unreasonable delay in implementation, or cause or contribute to violation of Federal, State, or local law.

Approval of an alternative postmining land use, may be met by requesting approval through the permit revision procedures rather than requesting such approval in the original permit application. The original permit application, however, must demonstrate that the land will be returned to its premining land use capability. An application for a permit revision of this type must be submitted in accordance with the requirements of filing for a Significant Permit Revision and shall constitute a significant alternation from the mining operations contemplated by the original permit, and shall be subject to the requirements for permits, permit processing, and administrative and judicial of decisions on permits under the regulatory program.

Surface coal mining operations may be conducted under a variance from the requirement to restore disturbed areas to their approximate original contour, if the following requirements are satisfied:

1.) The Division grants a variance from approximate original contour restoration requirements.
2.) The alternative postmining land use requirements are met.
3.) All applicable requirements of the act and the regulatory program, other than the requirement to restore disturbed areas to their approximate original contour, are met.
4.) After consultation with the appropriate land use planning agencies, if any, the potential use is shown to constitute an equal or better economic or public use.
5.) The proposed use is designed and certified by a qualified registered professional engineer in conformance with professional standards established to assure the stability, drainage, and configuration necessary for the intended use of the site.
6.) After approval, where required, of the appropriate State environmental agencies, the watershed of the permit and adjacent areas is shown to be improved.
7.) The highwall is completely backfilled with spoil material, in a manner which results in a static factor of safety of at least 1.3, using standard geotechnical analysis.
8.) Only the amount of spoil as is necessary to achieve the postmining land use, ensure the stability of spoil retained on the bench, and all spoil not retained on the bench shall be placed in accordance with all other applicable regulatory requirements.
9.) The surface landowner of the permit area has knowingly requested, in writing, that a variance be granted, so as to render the land after reclamation, suitable for an industrial, commercial, residential, or public use (including recreational facilities.)
10.) Federal, State, and local government agencies with an interest in the proposed land use have an adequate

period in which to review and comment on the proposed use.

Analysis:

According to the approved mining and reclamation plan, the premining land use for Crandall Canyon is undeveloped land. As defined by R645-100 under *Land Use*, "undeveloped land is land that is undeveloped or if previously developed, land that has been allowed to return naturally to an undeveloped state or has been allowed to return to forest through natural succession." Undeveloped land implies the land will have no structures or facilities and that it is not actively managed for wildlife or grazing.

This submittal proposes a change of land use from undeveloped land to recreational use for that portion of the disturbed area belonging to C-Canyon, L.C. as shown on Map 1 (Section 3.7-4(7) and 3.7-5(2) of the application).

The Regulations define recreational use as "Land used for public or private leisure-time activities, including developed recreation facilities such as parks, camps, and amusement areas, as well as areas for less intensive uses such as hiking, canoeing, and other undeveloped recreational uses."

A change of post-mining land use requires that the proposal is treated as a significant revision. Public notification of the land use change was advertised in the Sun Advocate for four consecutive issues from March 1 through March 22, 2001 (see Exhibit 3, Affidavit of Publication).

Land within the disturbed area has been deeded to C-Canyon, L.C., a Utah limited company whose representative is Reed L. Martineau (see App. 3.7V, Quit Claim Deed dated October 18, 2001. Both the land ownership information in the mining and reclamation plan (page 2.1-4) and Map 1, Willow Creek Mine Regional Surface Ownership Map have been revised accordingly.

The Permittee is proposing to leave the road through the canyon to provide unimpeded access as desired by the landowner C-Canyon, L.C. (See Appendix 3.7V letters from Mr. Martineau, dated October 19, 2000 and June 4, 2001, describing the need of the landowner for access to the property.) Mr. Martineau's plans for future development also require that a permanent road will remain in the canyon in order that governmental approval for improvements can be obtained.

In evaluating the requirements of R645-301-413.300, higher and better use, the Permittee notes that the presence of the road will allow development of the landowner's parcel of ground. The retention of the road is a pre-requisite to achieving the recreational landuse. Because the postmining land use has not previously been either recreation or wildlife habitat, no woody plant density standard was established. Now, however, there are woody plant density standards that will enhance the absorptive capacity of the watershed and improve the diversity of the site overall.

As shown on the Kyune, Utah quadrangle map, the Price Canyon Recreation Area sits one thousand feet above the floor of Crandall Canyon. The Price Canyon Recreation Area includes campgrounds and a picnic area. The zoning of the Price Recreation Area is presently Critical Environment Zone 1 (CE 1) due to its location above 7,000 feet in elevation. Crandall Canyon is presently Mining and Grazing 1 (MG 1). Under the current zones of MG 1 and CE 1, caretaker dwellings are allowed. There is another zone possible for the lower reaches of the canyon (below 7,000' elevation); that is Critical Environmental Zone 2 (CE 2). The zone of CE 2 further allows manufactured homes and single family dwellings and conditionally allows caretaker dwellings and camp site facilities.[2]

Findings:

The Division finds that the postmining land use change to recreational use for that portion of the disturbed area owned by C-Canyon, L.C., as requested by the landowner, can only be achieved with retention of the road. The Division also finds that the recreational land use is not impractical or unreasonable and is consistent with adjacent land use plans. Further, the Division finds that the use does not present any hazard to the public health and safety or contribute to water pollution or diminution. State and local land use plans and programs have been considered when making this determination.

PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

Regulatory Reference: 30 CFR 817.97; R645-301-333, -301-342, -301-358.

Minimum Regulatory Requirements:

Where wetlands and habitats of unusually high value for fish and wildlife occur, the operator conducting underground mining activities shall provide a description of the measures taken to avoid disturbances to, enhance where practicable, restore, or replace, wetlands and riparian vegetation along rivers and streams and bordering ponds and lakes. Designs and plans for underground mining activities shall include measures to avoid disturbances to, enhance where practicable, or restore habitats of unusually high value for fish and wildlife.

Where fish and wildlife habitat is to be a postmining land use, the plant species to be used on reclaimed areas shall be selected on the basis of the following criteria:

1.) Their proven nutritional value for fish or wildlife.
2.) tTheir use as cover for fish or wildlife.
3.) Their ability to support and enhance fish or wildlife habitat after the release of performance bonds. The selected plants shall be grouped and distributed in a manner which optimizes edge effect, cover, and other benefits to fish and wildlife.

Where cropland is to be the postmining land use, and where appropriate for wildlife- and crop-management practices, the operator shall intersperse the fields with trees, hedges, or fence rows throughout the harvested area to break up large blocks of monoculture and to diversify habitat types for birds and other animals.

Where residential, public service, or industrial uses are to be the postmining land use and where consistent with the approved postmining land use, the operator shall intersperse reclaimed lands with greenbelts utilizing species of grass, shrubs, and trees useful as food and cover for wildlife.

[2] Information on zoning obtained through a telephone conversation on November 20, 2001 between Gayla Williams, Deputy Zoning Administrator for Carbon County, and Priscilla Burton.

Analysis:

The only specific wildlife habitat enhancement measure included in the reclamation plan is to retain any power poles that are being used by raptors.

The applicant is required to use the best technology currently available to protect and enhance wildlife habitat, and there may be additional feasible alternatives that could be used. Although the postmining land use would not be wildlife habitat, wildlife would continue to use the area, and practical habitat enhancement is required for any land use, even including industrial sites. The plant species in the seed and planting mixture meet the requirements of R645-301-342.200 and should lead to good quality wildlife habitat.

The channel is designed as a rip-rapped, meandering channel. Soil would be placed among the riprap to help facilitate revegetation. This is an intermittent stream where water flows infrequently and with great variability. To enhance the riparian habitat, the applicant might be able to use willow wattles on the outside of some of the meanders or could possibly install in-stream structures, such as large rocks or logs. These types of features would create more places to capture and slow the gully washers that course through the stream channel.

It appears there is a seep or spring in the vicinity of pond 14, but the applicant does not show plans to develop this spring. Developing the spring, however, would probably require a water right, and it may be just as well to allow the water to flow down the channel, where it would support vegetation in the stream channel and still be available for wildlife.

Findings:

The information provided is adequate for the Protection of Fish Wildlife and Related Environmental Values as required by the Regulations.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-270, -301-271, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Minimum Regulatory Requirements:

Note :The following requirements have been suspended insofar as they authorize any variance from approximate original contour for surface coal mining operations in any area which is not a steep slope area.

Criteria for permits incorporating variances from approximate original contour restoration requirements.

The Division may issue a permit for nonmountaintop removal mining which includes a variance from the backfilling and grading requirements to restore the disturbed areas to their approximate original contour. The permit may contain such a variance only if the Division finds, in writing, that the applicant has demonstrated, on the basis of a complete application, that the following requirements are met:

1.) After reclamation, the lands to be affected by the variance within the permit area will be suitable for an industrial, commercial, residential, or public postmining land use (including recreational facilities).
2.) The criteria for the proposed post mining land use will be met.
3.) The watershed of lands within the proposed permit and adjacent areas will be improved by the operations when compared with the condition of the watershed before mining or with its condition if the approximate original

contour were to be restored. The watershed will be deemed improved only if: the amount of total suspended solids or other pollutants discharged to ground or surface water from the permit area will be reduced, so as to improve the public or private uses or the ecology of such water, or flood hazards within the watershed containing the permit area will be reduced by reduction of the peak flow discharge from precipitation events or thaws; the total volume of flow from the proposed permit area, during every season of the year, will not vary in a way that adversely affects the ecology of any surface water or any existing or planned use of surface or ground water; and, the appropriate State environmental agency approves the plan.

4.) The owner of the surface of the lands within the permit area has knowingly requested, in writing, as part of the application, that a variance be granted. The request shall be made separately from any surface owner consent given for right-of-entry and shall show an understanding that the variance could not be granted without the surface owner's request.

If a variance is granted, the requirements of the post mining land use criteria shall be included as a specific condition of the permit, and, the permit shall be specifically marked as containing a variance from approximate original contour.

A permit incorporating a variance shall be reviewed by the Division at least every 30 months following the issuance of the permit to evaluate the progress and development of the surface coal mining and reclamation operations to establish that the operator is proceeding in accordance with the terms of the variance. If the permittee demonstrates to the Division that the operations have been, and continue to be, conducted in compliance with the terms and conditions of the permit, the review specified need not be held. The terms and conditions of a permit incorporating a variance may be modified at any time by the Division, if it determines that more stringent measures are necessary to ensure that the operations involved are conducted in compliance with the requirements of the regulatory program. The Division may grant variances only if it has promulgated specific rules to govern the granting of variances in accordance with the provisions of this section and any necessary, more stringent requirements.

Analysis:

As part of the Division's review of Exhibit 20, Crandall Canyon, it was necessary to evaluate the Permittee's ability to achieve approximate original contour requirements while leaving roads P-1 and A-1 in place.

There are no highwalls in the Canyon; the mineable reserves in the "D" seam, the "A" seam, and the "Sub-3" coal seams are accessed by the two Crandall Canyon air shafts which average 1,425 feet in depth.

All requirements in the Canyon relative to the restoration of approximate original contour will deal with cut banks relative to road construction. Section 3.7-5(3)(4) of Exhibit 20, Approximate Original Contour Compliance, beginning on page 3.7-41 through 43 address AOC. As allowed under existing UDOGM Approximate Original Contour Regulations, limited portions of cut slopes will remain where they mimic or blend with existing topography and where fully reclaiming the cut slopes would result in slopes with a static factor of safety less than 1.3. Page 3.7-42 states that "The cut slopes identified along the road will remain, except in the facilities area where cut slopes are anticipated to be reclaimed."

There are two post reclamation cut slopes discussed in Appendix 3.7U, which are adjacent to the primary road designated as AP-1". PRCS-3 is located NE of sediment pond 014; (its up-canyon end lies 740 feet down-canyon of the #2 air shaft). PRCS-3 is approximately 750 feet long with a maximum height of thirty feet.

Post reclamation cut slope #4 (PRCS-4) begins 900 feet up-canyon of the US-6 gate and extends 850 feet; the maximum height of the cut slope is approximately thirty-five feet.

Both of the cut slopes are located along portions of primary road P-1 which will have no reclamation activities performed upon them, i.e., they will remain as they exist today assuming

that the change in the approved post-mining land use is successful and that the approval to retain primary road P-1 as approved access is inherent with that approval.

The reclamation of the access road within the surface facilities area will affect 750 feet of pre-reclamation cut slopes (three areas) which are not mentioned in Appendix 3.7U.

The first area is a 110 foot length of PRCS located adjacent to where the reclamation of the road begins 200 feet up-canyon of the #2 air shaft. This portion of cut slope lies half way between cross sections A-A' and B-B'. Examination of Exhibit 3.7-7D reveals that, although there are no pre land development surface contours shown, the final reclamation contour which is depicted shows an aesthetically pleasing slope. This, plus the fact that a static safety factor of 1.3 is achievable are felt to be adequate justification to meet the requirements of approximate original contour.

Area 2 is the 525 foot pre-reclamation cut slope which is intersected on the lower end by cross section C-C' and on the upper end by D-D'. As depicted by these cross sections, the final contour of the reclamation work will not achieve strict approximate original contour because 3.7-7D does not depict the pre-development surface contours of the area. The northern toe of the reclaimed area (C-C') intersects a nearly vertical slope which rises fifteen feet to the head of the cut slope. The northern edge of the reclamation work as depicted on cross section D-D' intersects a sixty degree slope. The attempt to return this cross section to AOC would probably encounter two problems. The first would be the stability of the area due to the amount of fill necessary to return the area to AOC; the second would be where to obtain that fill. It is therefore felt that although the requirements of AOC are not necessarily achievable, the aesthetic appearance of the reclaimed area plus the increased assurance of a more stable area due to the lower slope angle compensate for the lack of strict enforcement of AOC requirements.

Area 3 is about sixty feet up-canyon of cross section E-E' on the north side of the reclamation area. The operational phase slope of this area lies forty degrees from horizontal. The slope of the fill in the reclaimed area will be graded to approach the existing slope on a ten degree angle. Once again, the benefits of an increased assurance of stability, plus the aesthetically pleasing appearance of the reclaimed slope are felt to offset the benefits realized by the strict adherence to approximate original contour requirements.

Findings:

The Division has approved the post-mining land use of the Crandall Canyon Mine site as "recreational." To support the post mining land use and in accordance with R645-301-553.150, no reclamation activities will occur along the primary access road P-1 from the US-6 gate to 220 feet up-canyon of the #2 air shaft and no attempt will be made to reclaim this portion of the road.

Within the surface facilities reclamation area, the requirements of R645-301-553.110 have been adequately addressed.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Minimum Regulatory Requirements:

General

Disturbed areas shall be backfilled and graded to: achieve the approximate original contour; eliminate all highwalls, spoil piles, and depressions; achieve a postmining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a minimum long term static safety factor of 1.3 and to prevent slides; minimize erosion and water pollution both on and off the site; and, support the approved postmining land use.

The postmining slope may vary from the approximate original contour when approval is obtained from the Division for a variance from approximate original contour requirements, or when incomplete elimination of highwalls in previously mined areas is allowed under the regulatory requirements. Small depressions may be constructed if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation.

If it is determined by the Division that disturbance of the existing spoil or underground development waste would increase environmental harm or adversely affect the health and safety of the public, the Division may allow the existing spoil or underground development waste pile to remain in place. Accordingly, regrading of settled and revegetated fills to achieve approximate original contour at the conclusion of underground mining activities shall not be required if: the settled and revegetated fills are composed of spoil or nonacid- or nontoxic-forming underground development waste; the spoil or underground development waste is not located so as to be detrimental to the environment, to the health and safety of the public, or to the approved postmining land use; stability of the spoil or underground development waste must be demonstrated through standard geotechnical analysis to be consistent with backfilling and grading requirements for material on the solid bench (1.3 static safety factor) or excess spoil requirements for material not placed on a solid bench (1.5 static safety factor); and, the surface of the spoil or underground development waste shall be vegetated in accordance with the revegetation standards for success, and surface runoff shall be controlled in accordance with the regulatory requirements for diversions.

Spoil shall be returned to the mined-out surface area. Spoil and waste materials shall be compacted where advisable to ensure stability or to prevent leaching of toxic materials. Spoil may be placed on the area outside the mined-out surface area in nonsteep slope areas to restore the approximate original contour by blending the spoil into the surrounding terrain if the following requirements are met: all vegetative and organic materials shall be removed from the area; the topsoil on the area shall be removed, segregated, stored, and redistributed in accordance with regulatory requirements; the spoil shall be backfilled and graded on the area in accordance with the general requirements for backfilling and grading.

Disposal of coal processing waste and underground development waste in the mined-out surface area shall be in accordance with the requirements for the disposal of spoil and waste materials except that a long-term static safety factor of 1.3 shall be achieved.

Exposed coal seams, acid- and toxic-forming materials, and combustible materials exposed, used, or produced during mining shall be adequately covered with nontoxic and noncombustible materials, or treated, to control the impact on surface and ground water, to prevent sustained combustion, and to minimize adverse effects on plant growth and the approved postmining land use.

Cut-and-fill terraces may be allowed by the Division where: needed to conserve soil moisture, ensure stability, and control erosion on final-graded slopes, if the terraces are compatible with the approved postmining land use; or, specialized grading, foundation conditions, or roads are required for the approved postmining land use, in which case the final grading may include a terrace of adequate width to ensure the safety, stability, and erosion control necessary to implement the postmining land-use plan.

Preparation of final-graded surfaces shall be conducted in a manner that minimizes erosion and provides a surface for replacement of topsoil that will minimize slippage.

Previously mined areas

Remining operations on previously mined areas that contain a preexisting highwall shall comply with all other reclamation requirements except as provided herein. The requirement that elimination of highwalls shall not apply to remining operations where the volume of all reasonably available spoil is demonstrated in writing to the Division to be insufficient to completely backfill the reaffected or enlarged highwall. The highwall shall be eliminated to the maximum extent technically practical in accordance with the following criteria:

1.) All spoil generated by the remining operation and any other reasonably available spoil shall be used to backfill the area. Reasonably available spoil in the immediate vicinity of the remining operation shall be included within the permit area.
2.) The backfill shall be graded to a slope which is compatible with the approved postmining land use and which

provides adequate drainage and long-term stability.

3.) Any highwall remnant shall be stable and not pose a hazard to the public health and safety or to the environment. The operator shall demonstrate, to the satisfaction of the Division, that the highwall remnant is stable.

4.) Spoil placed on the outslope during previous mining operations shall not be disturbed if such disturbances will cause instability of the remaining spoil or otherwise increase the hazard to the public health and safety or to the environment.

Backfilling and grading on steep slopes

Underground mining activities on steep slopes shall be conducted so as to meet other applicable regulatory requirements and the requirements of this section. The following materials shall not be placed on the downslope: spoil; waste materials of any type; debris, including that from clearing and grubbing; abandoned or disabled equipment; land above the highwall shall not be disturbed unless the Division finds that this disturbance will facilitate compliance with the environmental protection standards and the disturbance is limited to that necessary to facilitate compliance; and, woody materials shall not be buried in the backfilled area unless the Division determines that the proposed method for placing woody material within the backfill will not deteriorate the stable condition of the backfilled area.

Special provisions for steep slope mining

No permit shall be issued for any operations covered by steep slope mining, unless the Division finds, in writing, that in addition to meeting all other regulatory requirements, the operation will be conducted in accordance with the requirements for backfilling and grading on steep slopes. Any application for a permit for surface coal mining and reclamation operations covered by steep slope mining shall contain sufficient information to establish that the operations will be conducted in accordance with the requirements for backfilling and grading on steep slopes.

This section applies to any person who conducts or intends to conduct steep slope surface coal mining and reclamation operations, except: where an operator proposes to conduct surface coal mining and reclamation operations on flat or gently rolling terrain, leaving a plain or predominantly flat area, but on which an occasional steep slope is encountered as the mining operation proceeds; where a person obtains a permit under the provisions for mountaintop removal mining; or, to the extent that a person obtains a permit incorporating a variance from approximate original contour restoration requirements.

Analysis:

General

The backfilling and grading plan is presented on Exhibits 3.7-7A, 7B, 7C, and 7D and discussed in Section 3.7-5(3)(3). Reclamation slopes will be concave in cross-section and will not exceed a slope of 2:1. Table 3.7-10 summarizes the cut/fill calculations: 85,860 cubic yards of cut and 83,990 cubic yards of fill and 6,680 cubic yards of topsoil.

Some cut slopes will remain. They will blend with the existing topography, and they will be compatible with the approved postmining land use. Cut slopes are discussed in more detail under Approximate Original Contour and also under Maps Plans and Cross-Sections of this Tecnical Analysis.

During Phase I and Phase II reclamation, 18.7 acres will be reclaimed. Of these acres, 16 will require topsoil. Topsoil will be applied at a depth of twelve inches, requiring 25,800 cubic yards.

Findings:

The information in the proposal is adequate to meet the Backfilling and Grading requirements of the Regulations.

MINE OPENINGS

Regulatory Reference: 30 CFR 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Minimum Regulatory Requirements:

Each exploration hole, other drillhole or borehole, shaft, well, or other exposed underground opening shall be cased, lined, or otherwise managed as approved by the Division to prevent acid or other toxic drainage from entering ground and surface waters, to minimize disturbance to the prevailing hydrologic balance and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit area and adjacent area. Each exploration hole, drill hole or borehole or well that is uncovered or exposed by mining activities within the permit area shall be permanently closed, unless approved for water monitoring or otherwise managed in a manner approved by the Division. Use of a drilled hole or monitoring well as a water well must meet the provisions required to protect the hydrologic balance. This section does not apply to holes drilled and used for blasting, in the area affected by surface operations.

Each mine entry which is temporarily inactive, but has a further projected useful service under the approved permit application, shall be protected by barricades or other covering devices, fenced, and posted with signs, to prevent access into the entry and to identify the hazardous nature of the opening. These devices shall be periodically inspected and maintained in good operating condition by the person who conducts the underground mining activities.

Each exploration hole, other drill hole or borehole, shaft, well, and other exposed underground opening which has been identified in the approved permit application for use to return underground development waste, coal processing waste or water to underground workings, or to be used to monitor ground water conditions, shall be temporarily sealed until actual use.

When no longer needed for monitoring or other use approved by the Division upon a finding of no adverse environmental or health and safety effects, or unless approved for transfer as a water well, each shaft, drift, adit, tunnel, exploratory hole, entry way or other opening to the surface from underground shall be capped, sealed, backfilled, or otherwise properly managed, as required by the Division and consistent with the requirements of 30 CFR Section 75.1711. Permanent closure measures shall be designed to prevent access to the mine workings by people, livestock, fish and wildlife, machinery and to keep acid or other toxic drainage from entering ground or surface waters.

Analysis:

As of October 23, 1991, Shafts No.1 and No.2 were sealed with six inch thick concrete slabs. A two inch PVC vent pipe was installed through the seal of each shaft. The sealing plan is detailed in Appendix 3.7M. The seals were intended to be temporary. Although the Applicant asserts that the present seals appear to be in compliance with MSHA guidelines 30 CFR 75.1711-1, there will be further sealing work done during Phase I of the reclamation as described in Section 3.7-5(3)(2). If the mine is not reactivated and the existing seals remain, then the permanent seals will be placed directly over the existing seals.

The 1996 Technical Analysis of the reclamation practices in Crandall Canyon resulted in the following declaration from the technical staff,

> *"The Division has approved the concept of sealing the ventilation raises with concrete plugs. Plugs may fail over time. Before the raises are sealed the Division will examine other methods of shaft sealing. If more effective methods exist then the Division will require the Operator to adopt the best shaft sealing method available.*
>
> *The Division has approved the temporary seal of mine entrances.*

Findings:

"The Division approves the concept of sealing the ventilation raises with plugs. Since shaft sealing technology is currently developing it is possible that improved methods will be available when the area is reclaimed. During final reclamation the Division will evaluate currently available shaft sealing methods. It there are methods superior to plugs the Division will require the Operator to use the best available shaft sealing technique."

(O:007038.wil/FINAL/WILLWCK.FTA)

Mr. Stan Perks, Mining Engineer with the Bureau of Land Management, has recently, verbally expressed concerns about the methods described in the reclamation plan for shaft closure and ventilation and brought this issue to the fore. As a result, the Division is initiating a separate review of this reclamation technique in cooperation with the BLM.

Findings:

The Permittee is currently considered to be in compliance with shaft sealing requirements; however, the Permittee will be required to modify the reclamation plans for the shafts in Crandall Canyon based upon the best available technology at the time of final reclamation. The Division is investigating this issue in cooperation with the BLM and will require the Permittee to provide amended plans as requirements become clear.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR 817.22; R645-301-240.

Minimum Regulatory Requirements:

Redistribution

Topsoil materials shall be redistributed in a manner that: achieves an approximately uniform, stable thickness consistent with the approved postmining land use, contours, and surface-water drainage systems; prevents excess compaction of the materials: and, protects the materials from wind and water erosion before and after seeding and planting.

Before redistribution of the material, the regarded land shall be treated if necessary to reduce potential slippage of the redistribution material and to promote root penetration. If no harm will be caused to the redistributed material and reestablished vegetation, such treatment may be conducted after such material is replaced.

The Division may choose not to require the redistribution of topsoil or topsoil substitutes on the approved postmining embankments of permanent impoundments or of roads if it determines that placement of topsoil or topsoil substitutes on such embankments is inconsistent with the requirement to use the best technology currently available to prevent sedimentation, and, such embankments will be otherwise stabilized.

Nutrients and soil amendments shall be applied to the initially redistributed material when necessary to establish the vegetative cover.

The Division may require that the B horizon, C horizon, or other underlying strata, or portions thereof, removed and segregated, stockpiled, be redistributed as subsoil in accordance with the requirements of the above if it finds that such subsoil layers are necessary to comply with the revegetation requirements.

Analysis:

Redistribution

Two topsoil piles exist at the site. These stockpiles were sampled in 1995. The results of that sampling are reported in Volume 15, Exhibit 20,Appendix 3.7S, "Crandall Canyon Soil Sampling Results." Topsoil pile No. 1 (referred to as stockpile A in the afore-mentioned report) is infested with noxious weeds and therefore its use as a source of topsoil is impaired. The 1,210 cubic yards in this pile could be used as subsoil, however.

Topsoil will be used from stockpile No. 2 (referred to as stockpile B in Appendix 3.7S) located on access road P-1. Stockpile No.2 has 6,680 cubic yards of soil (Exhibit 3.7-5C and Table 3.7-10), enough to cover 4 acres with twelve inches. The material in stockpile No 2 will be used as needed depending upon the results of soil sampling of the lower pad during reclamation and may not be entirely used. The excess soil in stockpile No 2 will be made available for reclamation of other Willow Creek Mine sites.

Substitute topsoil material will come from the facilities pad area. This material was tested according to the Division Guidelines[3] (see report in Appendix 3.7S). The Applicant suggests that the top eight feet of soil in the facilities area can be used as substitute topsoil. This would provide 51,400 cubic yards of soil, more than enough to cover the site with one foot of topsoil. This material will be used first to achieve final grade. Approximately 18,920 cubic yards are required as "substitute topsoil".

A test plot was gouged and seeded in 1996 on the upper and middle pads to prove that these pad soils could produce adequate vegetation. In October of 2000, the total cover on the site was 46%, which was adequate to meet the success standard, as concluded by Paul Baker, Division Biologist.

Further information on topsoil is location in Section 3.7-5(5) and Exhibit 5, Volume 4, Figure 8-5 contains the soil test results for samples taken during Crandall Canyon development in 1981.

Soils in the lower pad will again be sampled before use as substitute topsoil to avoid the soils with elevated selenium concentrations. At least three samples will be obtained from the soils in the lower pad.

Findings:

The information in the proposal is adequate to meet the requirements of this regulations. The Division recommends utilizing stockpile No.2 as a subsoil source.

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[3]Leatherwood, James and Dan Duce. 1988. "Guidelines for Topsoil and Overburden Management For Underground and Surface Coal Mines." Utah Department of Natural Resources. Division of Oil, Gas, and Mining.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Minimum Regulatory Requirements:

Reclamation

A road not to be retained under an approved postmining land use shall be reclaimed in accordance with the approved reclamation plan as soon as practicable after it is no longer needed for mining and reclamation operations. This reclamation shall include: closing the road to traffic; removing all bridges and culverts unless approved as part of the postmining land use; removing or otherwise disposing of road-surfacing materials that are incompatible with the postmining land use and revegetation requirements; reshaping cut and fill slopes as necessary to be compatible with the postmining land use and to complement the natural drainage pattern of the surrounding terrain; protecting the natural drainage patterns by installing dikes or cross drains as necessary to control surface runoff and erosion; and, scarifying or ripping the roadbed, replacing topsoil or substitute material and revegetating disturbed surfaces.

Retention

A road to be retained for an approved postmining land use shall be classified as a primary road and designed constructed and maintained in accordance with the requirements for primary roads and in consideration of the approved postmining land use.

Analysis:

Retention

Responsibilities for road maintenance were discussed during a meeting between the landowner (Mr. Reed Martineau), Plateau Mining Corporation (Johnny Pappas, Hans Bihr, Vickie Miller) and the Division (Paul Baker, Priscilla Burton, Gregg Galecki, Pete Hess, Daron Haddock) on May 23, 2001. The landowner will assume responsibility for maintenance and repair of the Crandall Canyon access road (letter dated June 4, 2001, Appendix 3.7V).

Findings:

The commitment from the landowner to assume responsibility for road maintenance after bond release is adequate to meet the Road Systems and Other Transportation Facilities section of the Regulations.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Minimum Regulatory Requirements:

Hydrologic reclamation plan

The application shall include a plan, with maps and descriptions, indicating how the relevant regulatory requirements will be met. The plan shall be specific to the local hydrologic conditions. It shall contain the steps to be taken during mining and reclamation through bond release to minimize disturbance to the hydrologic balance within the permit and adjacent areas; to prevent material damage outside the permit area; and to meet applicable Federal and State water quality laws and regulations. The plan shall include the measures to be taken to: avoid acid or toxic drainage; prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow; provide water treatment facilities when needed; and control drainage. The plan shall specifically address any potential adverse hydrologic consequences identified in the PHC determination and shall include preventive and remedial measures.

Each application shall contain descriptions, including maps and cross sections, of stream channel diversions and other diversions to be constructed within the proposed permit area to achieve compliance with the performance standards for those structures.

Postmining rehabilitation of sedimentation ponds, diversions, impoundments, and treatment facilities

Before abandoning a permit area or seeking bond release, the operator shall ensure that all temporary structures are removed and reclaimed, and that all permanent sedimentation ponds, diversions, impoundments, and treatment facilities meet the requirements of this Chapter for permanent structures, have been maintained properly and meet the requirements of the approved reclamation plan for permanent structures and impoundments. The operator shall renovate such structures if necessary to meet the requirements of this Chapter and to conform to the approved reclamation plan.

Analysis:

Acid- and Toxic-Forming Materials

Section 3.7-5(3)(1) states, "Any non-coal mine waste defined as "hazardous" under 3001 of the Resource Conservation and Recovery Act (RCRA) and 40 CFR Part 261 will be handled in accordance with the requirements of Subtitle C of RCRA and any implementing agency."

Section 3.7-5(3)(3) states, "Any acid forming or toxic materials exposed during the grading operation, ...will be treated or buried at a depth of no less than four feet."

Hilfilker retaining walls not covered by a minimum of four feet of soil will be removed. Concrete placed in the fill will also be buried four feet deep.

Sediment Control Measures

In the currently approved plan, the design calls for a rip-rap channel that is a constant 5.6 percent grade extended over a length of 3450 feet (Map Exhibit 3.7-7E). An April 19, 2001, field investigation was conducted by Division and PMC personnel to consider whether the designed rirap channel used the 'best technology currently available'(BTCA), and whether natural stream restoration features should be incorporated into the design. A consensus was that the approved design used the 'BTCA' based on the ephemeral nature and vegetation existing within the undisturbed channel.

Findings:

Information provided is adequate to meet the Hydrologic Information - Sediment control measures section of the Regulations.

REVEGETATION

Regulatory Reference: 30 CFR 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Minimum Regulatory Requirements:

Revegetation: General requirements

The permittee shall establish on regraded areas and on all other disturbed areas except water areas and surface areas of roads that are approved as part of the postmining land use, a vegetative cover that is in accordance with the approved permit and reclamation plan and that is: diverse, effective, and permanent; comprised of species native to the area, or of introduced species where desirable and necessary to achieve the approved postmining land use and approved by the Division; at least equal in extent of cover to the natural vegetation of the area; and, capable of stabilizing the soil surface from erosion.

The reestablished plant species shall: be compatible with the approved postmining land use; have the same seasonal characteristics of growth as the original vegetation; be capable of self-regeneration and plant succession; be compatible with the plant and animal species of the area; and, meet the requirements of applicable State and Federal seed, poisonous and noxious plant, and introduced species laws or regulations.

The Division may grant exception to these requirements when the species are necessary to achieve a quick-growing, temporary, stabilizing cover, and measures to establish permanent vegetation are included in the approved permit and reclamation plan.

When the Division approves a cropland postmining land use, the Division may grant exceptions to the requirements related to the original and native species of the area. Areas identified as prime farmlands must also meet those specific requirements as specified under that section.

Revegetation: Timing

Disturbed areas shall be planted during the first normal period for favorable planting conditions after replacement of the plant-growth medium. The normal period for favorable planting is that planting time generally accepted locally for the type of plant materials selected.

Revegetation: Mulching and other soil stabilizing practices

Suitable mulch and other soil stabilizing practices shall be used on all areas that have been regraded and covered by topsoil or topsoil substitutes. The Division may waive this requirement if seasonal, soil, or slope factors result in a condition where mulch and other soil stabilizing practices are not necessary to control erosion and to promptly establish an effective vegetative cover.

Revegetation: Standards for success

Success of revegetation shall be judged on the effectiveness of the vegetation for the approved postmining land use, the extent of cover compared to the cover occurring in natural vegetation of the area, and the general requirements for Revegetation. Standards for success and statistically valid sampling techniques for measuring success shall be selected by the Division and included in an approved regulatory program.

Standards for success shall include criteria representative of unmined lands in the area being reclaimed to evaluate the appropriate vegetation parameters of ground cover, production, or stocking. Ground cover, production, or stocking shall be considered equal to the approved success standard when it is not less than 90 percent of the success standard. The sampling techniques for measuring success shall use a 90-percent statistical confidence interval (i.e., a one-sided test with a 0.10 alpha error).

Standards for success shall be applied in accordance with the approved postmining land use and, at a minimum, the following conditions:

1.) For areas developed for use as grazing land or pasture land, the ground cover and production of living plants on the revegetated area shall be at least equal to that of a reference area or such other success standards approved by the Division.

2.) For areas developed for use as cropland, crop production on the revegetated area shall be at least equal to that of a reference area or such other success standards approved by the Division.

3.) For areas to be developed for fish and wildlife habitat, recreation, shelter belts, or forest products, success of vegetation shall be determined on the basis of tree and shrub stocking and vegetative ground cover. Such parameters are described as follows: minimum stocking and planting arrangements shall be specified by the Division on the basis of local and regional conditions and after consultation with and approval by the State agencies responsible for the administration of forestry and wildlife programs. Consultation and approval may occur on either a programwide or a permit-specific basis; trees and shrubs that will be used in determining the success of stocking and the adequacy of the plant arrangement shall have utility for the approved postmining land use. Trees and shrubs counted in determining such success shall be healthy and have been in place for not less than two growing seasons. At the time of bond release, at least 80 percent of the trees and shrubs used to determine such success shall have been in place for 60 percent of the applicable minimum period of responsibility; and, vegetative ground cover shall not be less than that required to achieve the approved postmining land use.

For areas to be developed for industrial, commercial, or residential use less than 2 years after regrading is completed, the vegetative ground cover shall not be less than that required to control erosion.

For areas previously disturbed by mining that were not reclaimed to the requirements of the performance standards and that are remined or otherwise redisturbed by surface coal mining operations, as a minimum, the vegetative ground cover shall be not less than the ground cover existing before redisturbance and shall be adequate to control erosion.

The period of extended responsibility for successful revegetation shall begin after the last year of augmented seeding, fertilizing, irrigation, or other work, excluding husbandry practices that are approved by the Division.

In areas of more than 26.0 inches of annual average precipitation, the period of responsibility shall continue for a period of not less than five full years. Vegetation parameters identified for grazing land or pasture land and cropland shall equal or exceed the approved success standard during the growing seasons of any two years of the responsibility period, except the first year. Areas approved for the other uses shall equal or exceed the applicable success standard during the growing season of the last year of the responsibility period.

In areas of 26.0 inches or less average annual precipitation, the period of responsibility shall continue for a period of not less than 10 full years. Vegetation parameters shall equal or exceed the approved success standard for at least the last 2 consecutive years of the responsibility period.

The Division may approve selective husbandry practices, excluding augmented seeding, fertilization, or irrigation, provided it obtains prior approval from the Director as a State Program Amendment that the practices are normal husbandry practices, without extending the period of responsibility for revegetation success and bond liability, if such practices can be expected to continue as part of the postmining land use or if discontinuance of the practices after the liability period expires will not reduce the probability of permanent revegetation success. Approved practices shall be normal husbandry practices within the region for unmined lands having land uses similar to the approved postmining land use of the disturbed area, including such practices as disease, pest, and vermin control; and any pruning, reseeding, and transplanting specifically necessitated by such actions.

Analysis:

Timing

The current mining and reclamation plan says seeding and planting will be done in the fall whenever possible but that it may sometimes be necessary to seed or plant in the spring. The applicant has had good success with planting seedlings in the fall, and this is considered the normal time to seed. Seeding in the spring increases the risk that vegetation will take much longer to establish, so although the mining and reclamation plan complies with regulatory requirements, the applicant should try to avoid spring seeding.

Mulching and Other Soil Stabilizing Practices

Before redistributing topsoil, the applicant will rip the underlying spoil to a depth of 18 to 24 inches. Topsoil will be redistributed on only part of the disturbed area; substitute topsoil will be used in the rest of the area. The applicant will spread alfalfa hay on the soil and substitute soil at a rate of about two tons per acre, and this will be mixed into the soil through gouging. The alfalfa serves as a soil amendment. No fertilizer will be added because fertilizer tends to increase the number of weeds.

Following soil surface preparation, the area will be broadcast seeded followed by application of between one and one and one-half tons per acre of straw and 500 pounds per acre of wood fiber hydromulch. The hydromulch is to anchor the straw. The gouging and mulching methods keep water from running off thereby promoting vegetation establishment and growth.

The seed mix consists of fifteen native species. The applicant has elected to use only one seed mix rather than having different seed mixes for different aspects or for the riparian area. The mix has species adapted to all the conditions at the mine from south-facing slopes to riparian areas to north-facing slopes.

The planting mix includes two species of conifers, bigtooth maple, and cottonwoods. The conifers will be planted near the main channel (CCRD-11) and in the side canyon with CCRD-3. The planting rates for the conifers were designed to not create a climax, closed forest type of community. The maples and cottonwoods will be planted about every twenty feet along the channel.

The revegetation methods proposed are the best of which the Division is aware and should lead to good revegetation success.

Standards for Success

General revegetation requirements are in R645-301-353, and the success standards specifically required for areas with grazing and recreation land uses are in R645-301-356.210 and R645-301-356.230. Revegetation success for these areas is judged on the basis of ground cover, productivity, and woody plant density. A standard for woody plant density was not previously established, since it was not required for the undeveloped postmining land use. Section 3.7-5(3)(9) now includes woody plant density standards that were set in consultation with the Division of Wildlife Resources. The standards are discussed below.

According to the original vegetation survey, five vegetation types were identified in the area that was proposed to be disturbed. These are conifer, riparian, grass/sage, mixed brush, and previously disturbed. According to the mining and reclamation plan and the application, the disturbed area would be compared with riparian and conifer reference areas in Crandall Canyon and with a grass sage reference area above the clean coal stockpile at the Willow Creek Preparation Plant.

Ground cover and productivity standards are relatively straightforward. The reclaimed areas can be compared statistically with the appropriate reference areas. This can be done combining the information currently in the mining and reclamation plan and the performance standards.

Diversity is judged using the Motyka Index as discussed in Chapter 9 of Exhibit 19. The standard is that the similarity between the reference and reclaimed areas must be at least the lower of 70% or the average similarity between each vegetation sample in the reference area. The Division has previously approved this standard and found it acceptable.

When the vegetation measurements were taken in 1981, the conifer reference area had 5244 shrubs and 389 trees per acre for a total of 5633 woody plants per acre. Most of these were Oregon grape, a very small shrub that often grows in the conifer understory. Considering the number of trees to be planted, the number of trees and shrubs in the reference area, and the desired vegetation community, the success standard has been set at 800 woody plants per acre (Section 3.7-5(3)(9). This will be composed of no more than 250 conifers per acre, and the rest will be shrubs or other kinds of trees. If there were more conifers than this, it would tend to lead to a closed stand with little understory.

The riparian area only had 223 woody plants per acre in 1981. While grasses and trees tend to dominate this area with few shrubs, the Division and Wildlife Resources decided to set the standard at 400 per acre.

Most of the site will be compared with the grass/sage reference area where woody plant density was measured at 981 per acre. According to the Division of Wildlife Resources, the area is in elk winter range, but deer do not winter in this area. At this elevation, deer instead prefer more exposed sites where forage is more easily available.

Elk are primarily grazers although they will eat some shrubs and mushrooms. For this reason and because Crandall Canyon does not contain winter habitat for mule deer, shrubs are not as important in this area as they would be in deer winter range. The main part of Crandall Canyon can meet the postmining land use even if it contains only a limited number of shrubs. However, the Division expects that many of the grasses that establish in this area to be tall grasses, such as basin wild rye and slender wheatgrass. Basin wild rye is a preferred species for elk because of its height and because it cures well and maintains its nutritional value into the winter.

Since shrubs are not as critical for meeting the postmining land use, the standards have been set relatively low. They are 200 per acre for the leach field area and 800 per acre elsewhere. The leach field area is next to pinyon/juniper, riparian, and conifer areas, so leaving it primarily as a grassland will provide more diversity and greater forage for wildlife, as well as accomodating the desires of the landowner (App 3.7V, letter dated June 4, 2001). The rest of the area is more open, so establishing shrubs for both cover and forage is more desirable.

As noted in Section 3.7-5(3)(9), the Permittee will meet diversity requirements for each of the reclaimed areas.

Findings:

Information in the proposal is adequate to meet the Revegetation requirements of the Regulations

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR 817.95; R645-301-244.

Minimum Regulatory Requirements:

All exposed surface areas shall be protected and stabilized to effectively control erosion and air pollution attendant to erosion. Rills and gullies which form in areas that have been regraded and topsoiled and which either disrupt the approved postmining land use or the reestablishment of the vegetative cover, or, cause or contribute to a violation of water quality standards for receiving streams, shall be filled, regraded, or otherwise stabilized; topsoil shall be replaced; and the areas shall be reseeded or replanted.

Analysis:

Section 3.7-5(2) itemizes the benefits of retaining primary road in Crandall Canyon:

travel will occur on the road, not overland;
- the road surface is resistant to erosion;
- the runoff from the road is controlled; and
- the road allows easy access for vegetation husbandry practices to ensure vegetation success.

One drawback is also pointed out:
- the road culverts will require maintenance which Plateau Mining Corporation will not provide, but which will be assumed by the landowner.

The Permittee asserts that the watershed will be improved as a result of reclamation with retention of the primary road due to the reduction of total suspended solids and through reduced flood hazards and by eliminating interference with natural flows of the stream.

As discussed in Section 3.7-5(3)(3) straw bales and/or silt fences will be installed within the main channel prior to conducting any activity in the channel. Depressions or catch basins in the main channel will also be used. Sediment ponds will be removed as reclamation overtakes them.

Prior to spreading topsoil, all regraded areas will be scarified to a depth of 18-24 inches by deep ripping to reduce slippage, increase moisture retention and promote root penetration. Should reclamation work be incomplete when seasonal conditions make it impossible to continue, then the backfilled and graded portions of the site will be left in a roughened state.

If the time interval between final grading and topsoil application is more than a month, the best approach would be to seed a cover crop to reduce weed cover and protect the ground from erosion.

Findings:

The information provided meets the minimum Stability requirements of the regulations

CESSATION OF OPERATIONS

Regulatory Reference: 30 CFR 817.131, 817.132; R645-301-515, -301-541.

Minimum Regulatory Requirements:

Each person who conducts mining activities shall effectively support and maintain all surface access openings to underground operations, and secure surface facilities in areas in which there are no current operations, but operations are to be resumed under an approved permit. Temporary abandonment shall not relieve a person of his or her obligation to comply with any provisions of the approved permit.

Before temporary cessation of mining and reclamation operations for a period of 30 days or more, or as soon as it is known that a temporary cessation will extend beyond 30 days, each person who conducts underground mining activities shall submit to the Division a notice of intention to cease or abandon operations. This notice shall include a statement of the exact number of surface acres and the horizontal and vertical extent of subsurface strata which have been in the permit area prior to cessation or abandonment, the extent and kind of surface area reclamation which will have been accomplished, and identification of the backfilling, regrading, revegetation, environmental monitoring, underground opening closures, and water-treatment activities that will continue during the temporary cessation.

The person who conducts underground mining activities shall close or backfill or otherwise permanently reclaim all affected areas, in accordance with this Chapter and according to the permit approved by the Division.

All surface equipment, structures, or other facilities not required for continued underground mining activities and monitoring, unless approved as suitable for the postmining land use or environmental monitoring, shall be removed and the affected lands reclaimed.

Analysis:

The aforementioned coal rules require a Permittee to close or permanently reclaim all affected areas impacted by coal mining and reclamation operations upon cessation of mining. The permittee must have a Division approved reclamation plan in place in order to conduct the reclamation activities for all of those areas. R645-301-541.300 states that "for the purposes of UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES, all surface equipment, structures, or other facilities not required for continued underground mining activities and monitoring, **"unless approved by the Division as suitable for the post-mining land use or environmental monitoring will be removed and the affected lands reclaimed".** Hence, the focus of this review has been upon verifying the ownership of the land and the requests of the landowner for post-mining land use

The Permittee has established that the retention of the road is a requirement of the successful outcome of the postmining recreational land use as envisioned by the landowner.

Findings:

Information provided is adequate for the purposes of the Regulations.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Minimum Regulatory Requirements:

Each application shall contain maps, plans, and cross sections which show the reclamation activities to be conducted, the lands to be affected throughout the operation, and any change in a facility or feature to be caused by the proposed operations, if the facility or feature was shown and described as an existing structure.

The permit application must include as part of the reclamation plan information, the following maps, plans and cross sections:

Affected area boundary maps

The boundaries of all areas proposed to be affected over the estimated total life of all mining activities and reclamation activities, with a description of size, sequence, and timing of phased reclamation activities and treatments. All maps and cross sections used for reclamation design purposes shall clearly show the affected and permit area boundaries in reference to the reclamation work being accomplished.

Bonded area map

The permittee shall identify the initial and successive areas or increments for bonding on the permit application map and shall specify the bond amount to be provided for each area or increment. The bond or bonds shall cover the entire permit area, or an identified increment of land within the permit area upon which the operator will initiate and conduct surface coal mining and reclamation operations during the initial term of the permit. As surface coal mining and reclamation operations on succeeding increments are initiated and conducted within the permit area, the permittee shall file with the Division an additional bond or bonds to cover such increments. Independent increments shall be of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the Division become necessary.

Reclamation backfilling and grading maps

Contour maps and cross sections to adequately show detail and design for backfilling and grading operations during reclamation. Where possible, cross sections shall include profiles of the pre-mining, operations, and post-reclamation topography. Contour maps shall be at a suitable scale and contour interval so as to adequately detail the final surface configuration. When used in the formulation of mass balance calculations, cross sections shall be at adequate scale and intervals to support the mass balance calculations. Mass balance calculations derived from contour information must demonstrate that map scale and contour accuracy are adequate to support the methods used in such earthwork calculations. Detailed cross sections shall be provided when required to accurately depict reclamation designs which include, but are not limited to: terracing and benching, retained roads, highwall remnants, slopes requiring geotechnical analysis, and embankments of permanent impoundments.

Reclamation facilities maps

Location of each facility that will remain on the proposed permit area as a permanent feature, after the completion of underground mining activities. Location and final disposition of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and embankment, disposal areas for underground development waste and excess spoil, and water treatment and air pollution control facilities within the proposed permit area to be used in conjunction with phased reclamation activities or to remain as part of reclamation.

Final surface configuration maps

Sufficient slope measurements to adequately delineate the final surface configuration of the area affected by surface operations and facilities, measured and recorded according to the following: each measurement shall consist of an angle of inclination along the prevailing slope extending 100 linear feet above and below or beyond the coal outcrop or the area disturbed or, where this is impractical, at locations specified by the Division; where the area has been previously mined, the measurements shall extend at least 100 feet beyond the limits of mining disturbances, or any other distance determined by the Division to be representative of the post-reclamation configuration of the land; and, slope measurements shall take into account variations in slope, to provide accurate representation of the range of slopes and reflect geomorphic differences of the area disturbed through

reclamation activities.

Reclamation monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, subsidence, fish and wildlife, and air quality, if required, to demonstrate reclamation success.

Reclamation surface and subsurface manmade features maps

The location of all buildings in and within 1,000 feet of the proposed permit area, with identification of the current or proposed use of the buildings at the time of final reclamation. The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit area, including, but not limited to, major electric transmission lines, pipelines, fences, and agricultural drainage tile fields. Each public road located in or within 100 feet of the proposed permit area and all roads within the permit area which are to be left as part of the post-mining land use. Buildings, utility corridors, and facilities to be used in conjunction with reclamation or to remain for final reclamation.

Reclamation treatments maps

The location and boundaries of any proposed areas for reclamation treatments including but not limited to: location, extent and depth of materials used for resoiling; location, extent and types of treatments for revegetation including soil preparation, soil amendments, mulching, seeding, variations in seed mixtures, and other revegetation treatments. Each water diversion, collection, conveyance, treatment, storage and discharge facility to be used during reclamation. Each facility to be used to protect and enhance fish and wildlife related environmental values. other treatments or applications which are specifically designed or required as part of phased or final reclamation activity.

Certification Requirements.

Cross sections, maps, and plans required to show the design, location, elevation, or horizontal or vertical extent of the land surface or of a structure or facility used to conduct mining and reclamation operations shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional land surveyor, with assistance from experts in related fields such as landscape architecture.

Each detailed design plan for an impounding structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture; include any geotechnical investigation, design, and construction requirements for the structure; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for an impounding structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments shall be certified by a qualified, registered, professional engineer; include any design and construction requirements for the structure, including any required geotechnical information; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Analysis:

Final Surface Configuration Maps

Within the amendment there are numerous references to the reclaiming of the cut-slopes within the facilities area. With the road remaining in place, cut-slopes along the road will no longer be reclaimed. In the current submittal, Maps labeled Exhibits 3.7-7A through 3.7-7C accurately illustrate all the cut-slopes that may or may not be reclaimed. Areas not completely backfilled are due to natural outcrops at that location. Exhibit 3.7-7B illustrates areas, PRCS-1 and PRCS-2, where cut-slopes will remain that are not associated with the leaving of the road.

Typographic errors previously identified on Exhibits 3.7-7C and 3.7-7B have been corrected with the exception culvert CCC-17 on Exhibit 3.7-7C and the two CCD-11 ditches on

Exhibit 3.7-7B. Although not correctly identified, the mis-labeling does not affect the sizing requirements of either culverts or ditches (sizing requirements are the same for both).

Exhibits 3.7-7A, 7B, 7C, and 7D of Exhibit 20, illustrate the retention of the access road P-1 and R-1 within the reclaimed facilities area. During operations Crandall Canyon surface facilities area was used for storage of mining related apparatus. During operations, the Crandall Canyon access road was designated as a primary road and labeled P-1 for a distance of 7,150 feet (from the US 6 gate to approximately 200 feet past the main intake or #1 air shaft). From that point, the road was designated as ancillary (and labeled as A-1). This ancillary portion was 5,065 feet or 0.96 miles in length, and was partially reclaimed (ripped and seeded) by AMAX Coal Company in 1990 or 1991.

The following is proposed during the reclamation of the Crandall Canyon access road:

1. The primary road P-1 will remain as it currently exists, up to a point approximately 200 feet up-canyon of the #2 (or return) air shaft.

Twelve culverts will remain in place to route collected drainage under the road toward Crandall Creek. These culverts include CCC-14 through CCC-21, CCC-24 and 27, and CCD-22 and 23.

2. A portion of the in-place primary road P-1 will be reclaimed, starting at a point approximately 200 feet up-canyon of the #2 air (return) shaft. The reclaimed road will be designated as R-1, and will be reclaimed for approximately 2,480 feet. Thus, as depicted on Exhibit 3.7-7B, approximately 1,000 feet of P-1, and 1,550 feet of A-1 will be reclaimed and designated R-1.

   Two culverts CCRC-1 and CCRC-2 will route drainage under the reclaimed road R-1 toward Crandall Creek.

3. As shown on Exhibit 3.7-7 and 3.7-7A, the ancillary road designated as A-1 (starting 175 feet west of the propane tank foundations) and terminating at the western end of the Canyon will remain in its current configuration during final reclamation to accommodate the landowners request for access.

   Four culverts are associated with the ancillary road A-1, starting at the propane tank foundations and terminating at the end of the disturbed area, (CCC 1-4). These remain as part of the drainage system for the area.

The portion of P-1 which is to be reclaimed (and re-designated as a portion of R-1) incorporates two plan view sections B-B', and C-C' as depicted on Exhibit 3.7-7B. Each cross section, as shown on Exhibit 3.7-7D will be discussed separately.

Cross Section B-B'

On cross section B-B', the center of the reclaimed road will be shifted approximately eighteen feet ESE toward the Canyon center. The original elevation of the road surface here will remain almost unchanged, being lowered an average of one foot in the center, and sloped away from the center of the drainage, such that runoff will report into ditch CCRD-9. The major changes noted in Section B-B' are the following:

1) The operational channel on the WNW side of the road will be completely backfilled.
2) The drainage will be relocated 175 feet to the ESE.
3) The surface elevation of the area will be lowered approximately 7.5 feet.

Cross Section C-C'

Cross section C-C' is located 150 feet down-canyon of the #1 or intake ventilation air shaft. As depicted on Exhibit 3.7-7D, the elevation of P-1 at this location will remain virtually unchanged, but will be sloped to the outside to collection ditch CCRD-9. This section is similar to B-B' in that the major changes noted are the backfilling of the P-1 drainage channel on the north side of the road and the moving of the center of the drainage 133 feet toward the south.

To obtain the material to fill the old drainage, the overall elevation of the surface will be lowered about six feet over a 110 foot width. Some fill will be disposed of in the toe of the southern embankment of C-C'. Both cross-sections C-C' and D-D' will intersect a pre-reclamation cut slope (which is depicted as 525 feet in length) as shown on Exhibit 3.7-7B.

However, based on examination of the cross-sections C-C' and D-D' of Exhibit 3.7-7D, the final contour of the reclamation work will not achieve approximate original contour because 3.7-7D does not depict the pre-development surface contours of the area. The northern toe of the reclaimed area intersects a nearly vertical slope that rises fifteen feet to the toe of the original slope.

Ancillary road A-1, (reclaimed as a portion of R-1)

The 1,666 feet of ancillary road A-1, which starts 200 feet up-canyon of the #1 or intake air shaft at the facility (and will be re-designated as a portion of R-1) which will be reclaimed incorporates three cross sections, as shown on the plan view depicted on Exhibit 3.7-7B. Cross sections D-D', E-E', and F-F' will be discussed individually.

Cross Section D-D'

Cross section D-D; is located 350 feet up-canyon of the #1 intake air shaft (transects the downstream crest of pond 015's dam). The center of the road R-1 is shifted almost due south twenty feet, but its surface elevation will be raised nine feet. As noted above, cross-section D-D' intersects a pre-reclamation cut slope located along the northern edge of the disturbed area. Examination of Exhibit 3.7-7D indicates that the final contour of the reclaimed area intersects the toe of a sixty degree slope. This contour will be more stable than trying to achieve an AOC

configuration, and is felt to be more acceptable for the Division's purposes. The impounding embankment of pond 015 will be lowered twelve feet (at the relocated center of the channel) to provide fill in this area. The only other significant change in this area is that the channel will be relocated 75 feet to the north or center of the Canyon. The surface elevation of the relocated/ reclamation channel bottom will be raised about eleven feet. The operational channel will be backfilled to a fifteen degree slope, starting at the crest of the south bank of the reclamation channel.

It needs to be noted here that although the reclaimed road R-1 will be built on nine feet of fill material, the fill will be compacted in a troughed area that has been in place for at least twenty years and is considered stable.

Cross Section E-E'

Cross Section E-E' is located 480 feet up-canyon of D-D'. The center of the reclaimed road R-1 has been moved about ten feet to the SWS, although its surface elevation has been raised about six and a half feet. Slopes above and below R-1 at this section are depicted to be graded to a maximum ten degree slope. This is adequate for stability.

Other changes indicated by cross section E-E' are that the operational drainage located on the SWS side of Crandall Canyon will be moved 97 feet to the NEN, placing it in the center of the Canyon. The operational channel will be backfilled, and the slopes will be graded to a final angle varying from nine to fifteen degrees from horizontal.

Cross Section F-F'

Cross Section F-F' is located 1300 feet up-canyon of the #1 (or intake) air shaft. The center of reclamation road R-1 will be moved about 17 feet to the SW (of the operational road A-1 center). R-1 will be raised approximately three and a half feet from the operational elevation. Only a minor amount of fill will be needed in this area (on the inside berm) ensuring a stable road surface. The fill slope above the road will be graded to a maximum of sixteen degrees above horizontal, and the placement will be in a trough that has been stable for many years. The cut below the road will be graded to a maximum of fifteen degrees from horizontal. Both angles are low enough to ensure adequate stability of the reclamation road when constructed of competent material kept free of saturation.

Other pertinent features of cross-section F-F' are as follows:

- The center of the operational drainage will be moved 100 feet to the NE. The reclaimed drainage will be one foot lower at the center of the channel than the operational drainage.
- The operational channel will be backfilled; in general the overall surface elevation in the area will be lowered approximately eight feet.

Cross Section G-G'

Cross Section G-G' is 500 feet up-canyon of F-F' and lies within the portion of the ancillary road A-1 which was ripped and re-seeded (reclaimed) in 1990 or 1991 by AMAX Coal Company. Exhibit 3.7-7D shows the center of reclamation road R-1 as identical to the center of the operational or ancillary road A-1. The outslope of the road here will be reshaped to a ten degree down dip. This section has been in place for twenty years. There are no concerns relative to the stability of the road here. G-G' also intersects a pre-reclamation cut slope, as indicated by Exhibit 3.7-7B. This cut slope will remain unchanged, as indicated on Exhibit 3.7-7D. The area has been reclaimed. The submitted plan and cross section drawings for the proposed changes were made "to depict a travelable road through the area to accommodate Mr. Martineau. The road is to be re-established , except through the immediate leach field area," as explained via the permittee's deficiency response dated September 12, 2001. No determination relative to approximate original contour can be made because, although the area has been reclaimed, a cross section representing the contour of this final reclamation has not been provided. This can be justified, as according to Mr. Johnny Pappas, "none of the previous Division approvals for this area contained pre-land development surface contour cross sections" (i.e. neither in the 1996 Technical Analysis and Mine Permit, nor any previous approvals). Only operational and reclamation cross-sections were presented and approved in the 1996 submittal.

The only significant changes relative to this cross section are:

- The center of the reclaimed drainage will be 25 feet NNW of the operational drainage.
- The operational drainage will be backfilled; the reclamation channel bottom will be about 2.5 feet higher in surface elevation than was the operational channel bottom.
- The cut which will be made on the north side of the operational channel appears to be at least twice the amount of material necessary to reclaim the operational channel.

Exhibit 3.7-7D contains a typical road cross section for reclamation road R-1. Same shows a twelve to fifteen foot roadway width having a one to three percent slope toward the ditch located along the inside berm. This ditch has a four foot top width and a one foot depth with 2:1 side slopes.

Exhibit 3.7-7D is P.E. certified by Mr. Layne D. Jensen, Utah registered professional engineer.

Reclamation Surface and Subsurface Manmade Features Maps

Alternate Sediment Control Measures will be implemented at Topsoil stockpiles No.1 and No.2, as outlined in Section 3.7-64. Access to Stockpile #1 will travel along the corridor shown on Exhibit 3.7-7C, which is used by PacifiCorp Lines and Services to access their utilities. Access to Stockpile #2 will be down the travel corridor that veers off primary road P-1 and accesses an old exploration road. The permittee has created an insert of Exhibit 3.7-7C and incorporated it onto Exhibit 3.7-7F which shows the reclamation treatment areas.

Findings:

The requirements of R645-301-542.310 have been adequately addressed.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR 800; R645-301-800, et seq.

Minimum Regulatory Requirements:

General

After a permit application has been approved, but before a permit is issued, the applicant shall file with the Division, on a form prescribed and furnished by the Division, a bond or bonds for performance made payable to the Division and conditioned upon the faithful performance of all the requirements of the Act, the regulatory program, the permit, and the reclamation plan.

The bond or bonds shall cover the entire permit area, or an identified increment of land within the permit area upon which the operator will initiate and conduct surface coal mining and reclamation operations during the initial term of the permit. As surface coal mining and reclamation operations on succeeding increments are initiated and conducted within the permit area, the permittee shall file with the Division an additional bond or bonds to cover such increments.

The operator shall identify the initial and successive areas or increments for bonding on the permit application map and shall specify the bond amount to be provided for each area or increment. Independent increments shall be of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the Division become necessary.

An operator shall not disturb any surface areas, succeeding increments, or extend any underground shafts, tunnels, or operations prior to acceptance by the Division of the required performance bond.

The applicant shall file, with the approval of the Division, a bond or bonds under one of the following schemes to cover the bond amounts for the permit area as determined: a performance bond or bonds for the entire permit area; a cumulative bond schedule and the performance bond required for full reclamation of the initial area to be disturbed; or, an incremental-bond schedule and the performance bond required for the first increment in the schedule.

Form of bond

The Division shall prescribe the form of the performance bond. The Division may allow for: a surety bond; a collateral bond; a self-bond; or a combination of any of these bonding methods.

Performance bond liability shall be for the duration of the surface coal mining and reclamation operation and for a period which is coincident with the operator's period of extended responsibility for successful revegetation or until achievement of the reclamation requirements of the Act, regulatory programs, and permit, whichever is later.

With the approval of the Division, a bond may be posted and approved to guarantee specific phases of reclamation within the permit area provided the sum of phase bonds posted equals or exceeds the total amount required. The scope of work to be guaranteed and the liability assumed under each phase bond shall be specified in detail.

Isolated and clearly defined portions of the permit area requiring extended liability may be separated from the original area and bonded separately with the approval of the Division. Such areas shall be limited in extent and not constitute a scattered, intermittent, or checkerboard pattern of failure. Access to the separated areas for remedial work may be included in the area under extended liability if deemed necessary by the Division.

The bond liability of the permittee shall include only those actions which he or she is obligated to take under the permit, including completion of the reclamation plan, so that the land will be capable of supporting the postmining land use approved. Implementation of an alternative postmining land use which is beyond the control of the permittee, need not be covered by the bond. Bond liability for prime farmland shall be specific to include productivity requirements.

Determination of bond amount

The amount of the bond required for each bonded area shall: be determined by the Division; depend upon the requirements of the approved permit and reclamation plan; reflect the probable difficulty of reclamation, giving consideration to such factors as topography, geology, hydrology, and revegetation potential; and, be based on, but not limited to, the estimated cost submitted by the permit applicant.

The amount of the bond shall be sufficient to assure the completion of the reclamation plan if the work has to be performed by the Division in the event of forfeiture, and in no case shall the total bond initially posted for the entire area under 1 permit be less than $10,000.

An operator's financial responsibility for repairing material damage resulting from subsidence may be satisfied by the liability insurance policy required in this section.

Terms and conditions for liability insurance

The Division shall require the applicant to submit as part of its permit application a certificate issued by an insurance company authorized to do business in the United States certifying that the applicant has a public liability insurance policy in force for the surface coal mining and reclamation operations for which the permit is sought. Such policy shall provide for personal injury and property damage protection in an amount adequate to compensate any persons injured or property damaged as a result of the surface coal mining and reclamation operations, including the use of explosives, and who are entitled to compensation under the applicable provisions of State law. Minimum insurance coverage for bodily injury and property damage shall be $300,000 for each occurrence and $500,000 aggregate.

The policy shall be maintained in full force during the life of the permit or any renewal thereof and the liability period necessary to complete all reclamation operations under this Chapter.

The policy shall include a rider requiring that the insurer notify the Division whenever substantive changes are made in the policy including any termination or failure to renew.

The Division may accept from the applicant, in lieu of a certificate for a public liability insurance policy, satisfactory evidence from the applicant that it satisfies applicable State self-insurance requirements approved as part of the regulatory program and the requirements of this section.

Analysis:

Form of Bond (Reclamation Agreement)

Three Surety bonds are in place for the Willow Creek Mine site:

Bond No. 103198931-059	in the amount of	$ 3,983,069.00
Bond No. KA2990-059	in the amount of	$ 3,983,068.00
Bond No. 210067-059	in the amount of	$ 3,983,068.00
	TOTAL	$11,949,205.00

All bonds were signed by the St. Paul Fire and Marine Insurance Company on July 1, 1999 and by Plateau Mining Corporation on August 17, 1999 and accepted by the Division Director, Lowell Braxton.

Determination of Bond Amount

The Permittee currently has a reclamation bond in the amount of $11,949,205.00 to cover the reclamation of the disturbed areas incorporated within the Willow Creek Mine's 14,670 permitted acres. Of this amount, $1,841,245 (See Table 3.1-2 and Appendix 3-2 relative to Crandall Canyon in the currently approved Willow Creek MRP) has been dedicated to the reclamation of the Crandall Canyon area. Since this amount has been reviewed and approved by the UDNR/OGM via previous submittals, that amount is considered adequate to reclaim the area. Additional justification that this amount is adequate can be assumed if the considerations below are evaluated:

- The ancillary road designated as A-1 in the leach field area has already been reclaimed, and

- The primary road designated as P-1 (starts at Permittee's gate at U.S. 6 and extends to the lower end of the surface facilities area) in Crandall Canyon and its associated post-reclamation cut slopes will remain as they currently exist due to the recreational post-mining land use.
- The amount of dirt moving necessary to reclaim the Crandall Canyon area will be much less than what the approved bond amount of $1,841,245 was calculated for reclamation.

Thus, the bond amount, as currently approved, will be used to reclaim much less than what was anticipated when that $1.85 million amount was determined and approved.

Findings:

The bond amount determination of $1,841,245 (as currently approved in the Willow Creek mining and reclamation plan) is adequate to reclaim the Crandall Canyon area.

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